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ABSTRACT

This report provides data on doctoral production and attrition at The University of California at Berkeley and also nationwide to provide a baseline for comparision of progress or regression. It was designed to contribute to the indentification of those aspects of graduate life that need affirmative action in order to bring the proportion of intellectually qualified women earning doctorates into partiy with that of intellectually qualified men. The report is divided into six sections: presentation of nationwide, university wide, and Berkeley data concerning women in graduate school; Berkeley enrollment and degree figures for women; national doctoral production data for women; dropout data for women; affirmative action materials; and data on two pilot studies of high school mathematics preparation concerning the correlation of mathematics success for women with later academic success; and the implications of undergraduate major choice for women. (Author/PG)

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PRELIMINARY REPORT ON THE STATUS OF GRADUATE WOMEN: UNIVERSITY OF CALIFORNIA, BERKELEY

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Prepared for the Graduate Assembly's Committee on the Status of Women

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March 30, 1973

PRELIMINARY REPORT ON THE STATUS OF GRADUATE WOMEN: UNIVERSITY OF CALIFORNIA, BERKELEY

This is a report to those concerned with improving the status of graduate women at Berkeley. It provides data on doctoral production and attrition at Berkeley and nationwide, to provide a baseline for comparison of progress or regression. It is hoped that this report will contribute to the identification of those aspects of graduate life which need affirmative action in order to bring the proportion of intellectually qualified women earning doctorates into parity with that of intellectually qualified men. The report is in six sections:

1. Presentation of nationwide, Universitywide, and Berkeley data. These were taken from Women in the Graduate Sector of the University of California, Report of an Ad Hoc Committee of the Coordinating Committee on Graduate Affairs, June, 1972. Permission to use the data was kindly granted by J. DeGroot, Chairman of the CCGA. Pages 2-6.
2. Berkeley enrollment and degree figures, compiled from the Office of Institutional Research. Pages 6-13.
3. National Doctoral Production data, compiled from U. S. Office of Education, EARNED DEGREES CONFERRED. The national data are for 1960-1969. The Top-Ten data are for 1953-1958, and 1963-1968. Pages 12-22.
4. Dropout data from the author's dissertation research on sex and discipline differences in doctoral attrition. These come from a survey of Woodrow Wilson Fellows who entered graduate school between 1958 and 1963. Pages 23-27.
5. Affirmative Action materials produced by the Association of American Colleges, 1818 R Street, N. W., Washington, DC 20009. Pages 28-44.
6. Data on two pilot studies of High School mathematics preparation, and the implications for choice of undergraduate major. Pages 45-49.

As you read the tables throughout the report, keep in mind an ideal type model of a truly meritocratic University. This would be one in which the only factors operating to filter people out would be lack of talent and unwillingness to work. In such a Utopia, assuming these two variables to be randomly distributed between the sexes, the proportion of women at each level would approximate their proportion in the population. The magnitude of the departure from 51% gives a good estimate of the extent to which other factors are operating.

Research is needed to untangle variations in levels of ambition and

ACHIEVEMENT ASPIRATIONS. THESE ARE BASED ON EXPECTATIONS HELD FOR INDIVIDUALS BY THE SIGNIFICANT PERSONS IN THEIR LIVES: FATHERS, MOTHERS, SIBLINGS, FRIENDS, SPOUSES, TEACHERS, AND PROFESSORS. THEY ARE ALSO BASED ON CONFLICTING OBLIGATIONS PLACED ON THE TIME AND ENERGIES OF THE STUDENT, AND ON THE NUMBER OF PERCEIVED ALTERNATIVES TO EARNING A DOCTORATE. IN SUM, WHAT IS NEEDED IS A WAY OF QUANTIFYING THE PRESSURES FOR AND AGAINST EARNING A DOCTORATE, IN ORDER TO SEE HOW THESE PRESSURES MIGHT OPERATE DIFFERENTLY ON MEN AND ON WOMEN.

1. NATIONWIDE, UNIVERSITYWIDE, AND BERKELEY DATA

TABLE I, BELOW, SHOWS THE SHOWS THE PERCENTAGE OF WOMEN ENROLLED AND EARNING DEGREES FOR THE ENITRE NATION, IN ACADEMIC YEAR 1969-1970.

TABLE I

PERCENTAGE OF WOMEN ENROLLED AND EARNING DEGREES - ALL U. S., 1969-1970

	% WOMEN	TOTAL STUDENTS
UNDERGRADUATE ENROLLMENT	42%	6,783,893
BACCALAUREATES	43%	798,070
FIRST YEAR GRADUATE ENROLLMENT	40%	527,834
MASTER'S DEGREES	40%	209,387
TOTAL GRADUATE ENROLLMENT	35%	816,207
DOCTORATES	14%	29,872

SOURCE: WOMEN IN THE GRADUATE SECTOR OF THE UNIVERSITY, REPORT OF AN AD HOC COMMITTEE OF THE COORDINATING COMMITTEE ON GRADUATE AFFAIRS, JUNE, 1972, TABLE A-1.

AT THE NATIONAL LEVEL, WOMEN EARNED THE BACCALAUREATE AND MASTER'S DEGREES IN THE SAME PROPORTION AS THEY ARE ENROLLED. THE BIG DROP IN THE PROPORTION OF WOMEN IS WHEN WE COMPARE THE TOTAL GRADUATE ENROLLMENT, 35%,

WITH THE DOCTORATES GRANTED. WE DON'T HAVE THE DATA TO ACCOUNT FOR THE DISCREPANCY BETWEEN TOTAL GRADUATE ENROLLMENT AND DOCTORATES GRANTED. IT MAY BE THAT WOMEN SIMPLY HAVE LOWER DEGREE ASPIRATIONS THAN MEN; THAT THEY ARE ENTERING MASTER'S LEVEL PROGRAMS WITH THE INTENT OF GETTING LABORATORY TECHNICIAN JOBS, INSTEAD OF DOCTORAL PROGRAMS WITH THE INTENT OF TEACHING AT MAJOR UNIVERSITIES. EVEN IF THIS WERE TRUE, IT WOULD BE UNFAIR TO PREDICT THE PERFORMANCE OF WOMEN WITH HIGHER ASPIRATIONS ON THE BASIS OF THE PERFORMANCE OF THOSE WHO ARE WILLING TO SETTLE FOR LESS.

THE CRUCIAL QUESTION CONCERNS THE PROCESS BY WHICH SOME WOMEN ARE WILLING TO SETTLE FOR LESS. ARE THEY PERSUADED BY FACULTY THAT THEY DON'T REALLY NEED A HIGHER DEGREE, OR IS IT AN ACTIVE DECISION, MADE BY INDIVIDUALS ON THE BASES OF REAL OPTIONS OPEN TO THEM?

TABLE II, ON THE NEXT PAGE, SHOWS THE PERCENTAGE OF WOMEN ENROLLED AND EARNING GRADUATE DEGREES AT EIGHT UNIVERSITY OF CALIFORNIA CAMPUSES IN 1970-1971. THE UNDERGRADUATE ENROLLMENT AND BACCALAUREATE DATA FOR THE ENTIRE UNIVERSITY SYSTEM COMPARE FAVORABLE WITH THE NATIONAL DATA. HOWEVER, THE GRADUATE ENROLLMENT AND MASTER'S DEGREES DO NOT. ONLY 26% OF THE TOTAL BERKELEY GRADUATES ARE WOMEN, COMPARED WITH 35% NATIONALLY, AND 30% OF THE MASTER'S DEGREES, COMPARED WITH 40% NATIONWIDE. AT THE DOCTORAL LEVEL, BERKELEY COMPARES FAVORABLY WITH THE NATIONAL FIGURES, PARTICULARLY WHEN ITS HIGHLY COMPETATIVE ADMISSIONS AND DEGREE REQUIREMENTS ARE TAKEN INTO ACCOUNT.

TABLE III, ON THE FOLLOWING PAGE, SHOWS THAT WOMEN WERE ADMITTED TO THE GRADUATE PROGRAM AT BERKELEY IN THE SAME PROPORTION AS THEY WERE APPLYING FOR ACADEMIC YEAR 1971-72. HOWEVER, THE PROPORTION OF WOMEN APPLYING VARIES CONSIDERABLY BY FIELD. WHILE ONLY 11% OF THE APPLICANTS IN THE PHYSICAL SCIENCES WERE WOMEN, 30% OF THE APPLICANTS IN THE SOCIAL SCIENCES, 53% OF THOSE IN THE HUMANITES, AND 56% OF THE APPLICANTS IN THE ARTS WERE WOMEN.

THE PROPORTION OF WOMEN IN TOTAL GRADUATE ENROLLMENT HAS RISEN FROM 22% IN 1960-61, TO 27% IN 1970-71. IN THE MATHEMATICAL SCIENCES, IT HAS RISEN FROM 9% IN 1960-61 TO 14% IN 1969-70. COMPARABLE FIGURES IN OTHER FIELDS ARE PHYSICAL SCIENCES, FROM 6% TO 8%; BIOLOGICAL SCIENCES, FROM 23% TO 30%; PSYCHOLOGY, FROM 30% TO 40%; SOCIAL SCIENCES, FROM 18% TO 25%; HUMANITIES, FROM 35% TO 49%; AND ARTS, FROM 46% TO 50%. FURTHER DISCUSSION OF THE DIFFERENTIAL SELECTION INTO DISCIPLINE WILL BE POSTPONED UNTIL THE MATHEMATICS SECTION OF THE REPORT.

TABLE 11

PERCENT OF WOMEN ENROLLED AND AWARDED DEGREES IN UNDERGRADUATE AND GRADUATE PROGRAMS, EIGHT CAMPUSES, UNIVERSITY OF CALIFORNIA, 1970-71

	TOTAL	UCB	UCLA	UCD	UCSD	UCR	UCSB	UCI	UCSC
UNDERGRADUATE ENROLLMENT*	44%	40%	45%	48%	38%	44%	48%	44%	49%
	(73,223)	(18,361)	(17,187)	(9,651)	(4,174)	(4,728)	(11,232)	(4,743)	(3,446)
ALL BACCALAUREATE AWARDS	45%	43%	47%	48%	35%	43%	48%	38%	47%
	(18,164)	(5,693)	(4,906)	(2,191)	(545)	(1,029)	(2,327)	(580)	(681)
B. A.'S ONLY	52%	50%	52%	59%	35%	46%	50%	44%	47%
	(14,833)	(4,613)	(4,278)	(1,202)	(545)	(887)	(2,210)	(417)	(681)
GRADUATE ENROLLMENT*	27%	26%	30%	23%	20%	30%	30%	29%	31%
	(25,017)	(9,069)	(8,227)	(2,504)	(1,149)	(1,289)	(1,777)	(736)	(267)
ALL MASTER'S DEGREES	34%	30%	36%	30%	15%	33%	29%	38%	25%
	(5,502)	(2,155)	(2,060)	(398)	(116)	(197)	(319)	(100)	(12)!
M. A.'S ONLY	43%	43%	46%	44%	34%	44%	32%	36%	43%
	(2,034)	(654)	(744)	(139)	(41)	(131)	(273)	(36)	(7)!
PH. D. AWARDS	13%	13%	18%	8%	11%	8%	4%	22%	-
	(1,789)	(736)	(497)	(178)	(126)	(108)	(101)	(22)	(2)!

SOURCE: WOMEN IN THE GRADUATE SECTOR OF THE UNIVERSITY OF CALIFORNIA, REPORT ON AN AD HOC COMMITTEE OF THE COORDINATING COMMITTEE ON GRADUATE AFFAIRS, JUNE, 1972, TABLE B-1.

* BASED ON THREE TERM AVERAGE ENROLLMENT

NUMBER IN PARENTHESIS IS TOTAL NUMBER OF CASES IN EACH CATEGORY.

TABLE III

PROPORTIONS OF WOMEN IN GRADUATE APPLICATIONS AND ADMISSIONS, UC BERKELEY, 1971-1972

	APPLICATIONS	ADMISSIONS
ACADEMIC FIELDS		
PHYSICAL SCIENCES	11% (1,685)	10% (800)
BIOLOGICAL SCIENCES	31% (631)	27% (241)
SOCIAL SCIENCES	30% (2,855)	30% (695)
HUMANITIES	53% (1,094)	55% (518)
ARTS	56% (475)	58% (114)
TOTAL ACADEMIC FIELDS	31% (6,740)	30% (2,368)
PROFESSIONAL FIELDS		
ENGINEERING	2% (2,118)	2% (1,028)
AGRICULTURAL SCIENCES	23% (272)	22% (136)
PROFESSIONS	42% (6,162)	41% (1,666)
TOTAL PROFESSIONAL FIELDS	31% (8,552)	26% (2,830)
TOTAL, ALL FIELDS	31% (15,292)	28% (5,198)

SOURCE: OP. CIT., TABLE C-1.
NUMBER IN PARENTHESIS IS TOTAL NUMBER OF APPLICATIONS AND ADMISSIONS.

There were 1,970 applicants for Fall 1969 Fellowships at Berkeley, with 29% of the applicants being women. There were 944 Fellowships offered, with 26% of the offers going to women. The complex relation between financial support and doctoral completion is explored in the section on attrition among Woodrow Wilson Fellows, pages 23-27. Further research is still in progress. We turn now to the Berkeley enrollment and degree figures compiled from the Office of Institutional Research.

2. BERKELEY ENROLLMENT AND DEGREE FIGURES

The tables starting on the next page show the distribution of degrees conferred by the University of California at Berkeley.

Table I shows the Bachelor's degrees conferred by Schools and Colleges for two time periods: 1947-1948 through 1951-52, and 1967-68 through 1971-72. It permits comparison of degree production over twenty years within schools and colleges, and comparison of schools and colleges within time periods.

Table II shows the Bachelor's and Doctorates conferred by the larger Departments in the College of Letters and Science for 1967-68 through 1971-72. It permits comparison of short-term changes in degree production across the departments, and of the attrition in percentage of women earning the Bachelor's and the Doctorate within departments.

Table III shows the Bachelors degrees and Doctorates conferred by ten large Letters and Science Departments for three time periods: 1948-49 through 1952-53; 1963-1964 through 1967-68; and 1968-69 through 1971-72. It permits comparison of both long run and short run change within and across departments.

These tables show large differences across disciplines in the percentage of degrees awarded to women. Among the Colleges and Schools, women are seriously underrepresented in all but Letters and Science, where they comprise 53% of the recent Baccalaureate production. In the School of Business Administration, it was 17%; in the College of Chemistry, 12%; in the College of Engineering, 1%.

There is also considerable variation within the College of Letters and Science. Highly female fields include Anthropology, 69%; English, 67%; French, 83%; Comparative Literature, 73%; History, 51%; and Psychology 50%. Highly male fields include Economics, with 18% women, Physics, with 6%, Philosophy, with 28%, and Mathematics, with 30%.

TABLE 1 BACHELOR'S DEGREES AT BERKELEY, 1947-51 AND 1967-71
BY SEX AND COLLEGE OR SCHOOL

		1947	1948	1949	1950	1951	TOTAL	1967	1968	1969	1970	1971	TOTAL
BUS. AD. BS	M	586	722	839	607	434	3188	229	219	202	260	259	1169
	W	64	71	66	45	38	284	35	20	33	62	39	189
	T	650	793	905	652	472	3472	264	239	235	322	298	1358
% WOMEN		10%	9%	7%	7%	8%	8%	13%	8%	14%	19%	13%	14%
CRIM. AB	M	-	-	-	18	22	40	25	28	33	54	41	181
	W	-	-	-	1	-	1	16	17	21	25	28	107
	T	-	-	-	19	22	41	41	45	54	79	69	288
% WOMEN					5%	-	2%	39%	38%	39%	32%	41%	37%
FORESTRY BS	M	44	69	83	56	69	321	23	29	25	36	45	158
	W	-	-	-	-	-	-	-	-	-	1	4	5
	T	44	69	83	56	69	321	23	29	25	37	49	163
% WOMEN		-	-	-	-	-	-	-	-	-	3%	9%	3%
OPTOMETRY BS	M	46	50	43	43	21	203	28	30	47	36	35	176
	W	1	2	-	1	4	8	5	4	3	5	5	22
	T	47	52	43	44	25	211	33	34	50	41	40	198
% WOMEN	M	2%	4%	-	2%	16%	4%	15%	12%	6%	12%	12%	11%
AGRICULT. BS	M	117	134	167	132	104	654	37	28	38	37	58	198
	W	37	51	37	38	36	199	20	15	24	32	45	136
	T	154	185	204	170	140	853	57	43	62	69	103	344
% WOMEN		24%	28%	18%	22%	26%	23%	35%	35%	39%	46%	44%	41%
ARCHITEC. AB	M	24	50	113	131	98	416	18	20	29	109	146	322
	W	5	8	5	6	1	25	5	1	12	24	24	66
	T	29	58	118	137	99	441	23	21	41	133	170	388
% WOMEN		17%	14%	4%	4%	1%	6%	22%	5%	29%	18%	14%	17%
CHEMISTRY BS	M	88	109	158	164	92	611	78	98	86	81	73	416
	W	6	4	8	4	2	24	9	13	14	11	12	59
	T	94	113	166	168	94	635	87	111	100	92	85	475
% WOMEN		6%	4%	5%	2%	2%	4%	10%	12%	14%	12%	14%	12%
ENGINEER. BS	M	627	760	896	737	473	3493	386	330	336	393	392	1837
	W	5	2	6	3	-	16	6	M 2	4	5	7	24
	T	632	762	902	740	473	3509	392	332	340	398	399	1861
% WOMEN	M	1%	*	1%	*	=	*	2%	1%	1%	1%	2%	1%
LETTERS & SCIENCE AB	M	1125	1432	1750	1475	1130	6912	1520	1558	1832	2111	2184	9205
	W	990	1102	1000	973	905	4970	1904	1878	2157	2265	2041	10245
	T	2115	2534	2750	2448	2035	11882	3424	3436	3989	4376	4225	19450
% WOMEN		47%	43%	36%	40%	44%	41%	56%	55%	54%	52%	48%	53%

* LESS THAN 1%

COMPILED FROM RECORDS OF OFFICE OF INSTITUTIONAL RESEARCH, UNIVERSITY OF CALIFORNIA.
LUCY W. SELLS
11-6-72

TABLE II BERKELEY DEGREES IN LETTERS AND SCIENCE 1967-68 THROUGH 1971-72

		BACCALAUREATE						DOCTORATE					
		1967	1968	1969	1970	1971	TOTAL	1967	1968	1969	1970	1971	TOTAL
ANTHROPOLOGY	M	50	43	79	64	76	312	14	12	12	14	14	66
	W	110	125	168	167	128	698	5	5	10	10	5	35
	T	160	168	247	231	204	1010	19	17	22	24	19	101
% WOMEN		69%	74%	68%	72%	63%	69%	26%	29%	45%	42%	26%	35%
BACTERIOLOGY	M	8	7	12	16	24	67	2	1	3	2	1	9
	W	34	19	22	18	23	116	1	-	2	-	1	4
	T	42	26	34	34	47	183	3	1	5	2	2	13
% WOMEN		81%	73%	65%	53%	49%	63%	*	*	*	*	*	31%
BIOCHEMISTRY	M	27	30	49	42	43	191	9	14	10	14	11	58
	W	16	11	12	14	16	69	3	-	3	2	3	11
	T	43	41	61	56	59	260	12	14	13	16	14	69
% WOMEN		37%	27%	20%	25%	27%	27%	*	*	*	*	*	16%
COMPARATIVE LITERATURE	M	8	11	15	17	10	61	-	2	3	3	2	10
	W	22	40	42	33	32	169	-	2	-	3	2	7
	T	30	51	57	50	42	230	-	4	3	6	4	17
% WOMEN		73%	78%	74%	66%	76%	73%	-	*	*	*	*	41%
COMPUTER SCIENCE	M	10	15	35	48	43	151	-	-	1	-	3	4
	W	6	9	16	15	13	59	-	-	-	-	-	-
	T	16	24	51	63	56	210	-	-	1	-	3	4
% WOMEN		38%	38%	32%	24%	23%	28%	-	-	*	-	*	*
ECONOMICS	M	126	93	118	126	131	594	29	24	29	26	27	135
	W	40	27	19	18	28	132	7	5	2	4	3	21
	T	166	120	137	144	159	726	36	29	31	30	30	156
% WOMEN		24%	22%	14%	12%	18%	18%	19%	17%	6%	13%	10%	13%
ENGLISH	M	94	106	135	143	154	632	13	19	15	23	27	97
	W	243	245	297	260	222	1267	6	6	4	9	6	31
	T	337	351	432	403	376	1899	19	25	19	32	33	128
% WOMEN	M	72%	70%	69%	65%	59%	67%	32%	24%	21%	28%	18%	24%
FRENCH	M	8	16	13	14	11	62	-	-	-	1	3	4
	W	77	73	57	63	33	303	-	2	2	1	3	8
	T	85	89	70	77	44	365	-	2	2	2	6	12
% WOMEN		91%	82%	81%	82%	75%	83%	*	*	*	*	*	*
GEOGRAPHY	M	16	18	14	24	29	101	8	6	5	4	6	29
	W	10	15	18	19	12	74	-	-	-	1	1	2
	T	26	33	32	43	41	175	8	6	5	5	7	31
% WOMEN		38%	45%	56%	44%	29%	42%	*	*	*	*	*	6%

COMPILED FROM RECORDS OF OFFICE OF INSTITUTIONAL RESEARCH, UNIVERSITY OF CALIFORNIA.
LUCY W. SELLS
11-4-72

* NUMBER OF CASES TOO SMALL TO PERCENTAGE.

TABLE II BERKELEY DEGREES IN LETTERS AND SCIENCE

		BACCALAUREATE						DOCTORATE					
		1967	1968	1969	1970	1971	TOTAL	1967	1968	1969	1970	1971	TOTAL
GERMAN	M	11	18	5	7	9	50	4	6	5	3	1	19
	W	22	23	20	16	20	101	-	2	2	2	3	9
	T	33	41	25	23	29	151	4	8	7	5	4	28
% WOMEN		67%	56%	80%	70%	69%	67%	*	*	*	*	*	32%
HISTORY	M	167	173	150	183	177	850	18	27	26	27	31	129
	W	200	175	189	183	133	880	1	2	8	2	6	19
	T	367	348	339	366	310	1730	19	29	34	29	37	148
% WOMEN		54%	50%	56%	50%	43%	51%	5%	7%	24%	7%	16%	13%
LINGUISTICS	M	3	2	6	7	9	27	2	2	4	7	11	26
	W	9	11	11	10	10	51	-	2	1	3	1	7
	T	12	13	17	17	19	78	2	4	5	10	12	33
% WOMEN		75%	85%	65%	59%	53%	65%	*	*	*	*	*	21%
MATHEMATICS	M	50	83	94	72	81	380	35	45	27	29	29	165
	W	38	25	32	32	38	165	3	-	3	1	1	8
	T	88	108	126	104	119	545	38	45	30	30	30	173
% WOMEN		43%	23%	25%	31%	32%	30%	8%	-	10%	3%	3%	5%
PHILOSOPHY	M	36	30	29	58	40	193	5	6	2	6	2	21
	W	18	18	12	16	11	75	-	-	1	-	-	1
	T	54	48	41	74	51	268	5	6	3	6	2	22
% WOMEN		33%	38%	29%	22%	22%	28%	*	*	*	*	*	5%
PHYSICS	M	66	59	56	52	51	284	53	46	51	41	41	232
	W	5	1	3	4	5	18	3	2	2	1	-	8
	T	71	60	59	56	56	302	56	48	53	42	41	240
% WOMEN		7%	2%	5%	7%	9%	6%	5%	4%	4%	2%	-	3%
PHYSIOLOGY	M	12	10	9	20	26	77	1	4	7	5	5	22
	W	14	8	10	8	8	48	1	2	-	2	2	7
	T	26	18	19	28	34	125	2	6	7	7	7	29
% WOMEN		54%	44%	53%	29%	24%	38%	*	*	*	*	*	24%
POLITICAL SCIENCE	M	223	204	192	236	199	1054	14	15	16	20	19	84
	W	115	112	94	71	85	477	3	1	-	5	5	14
	T	338	316	286	307	284	1531	17	16	16	25	24	98
% WOMEN		34%	35%	33%	23%	30%	31%	18%	6%	-	20%	21%	14%
PSYCHOLOGY	M	128	169	166	205	239	907	18	14	14	12	15	73
	W	138	165	192	220	195	910	7	6	9	7	11	40
	T	266	334	358	425	434	1817	25	20	23	19	26	113
% WOMEN		52%	49%	54%	52%	45%	50%	28%	30%	39%	37%	42%	35%

TABLE II BERKELEY DEGREES IN LETTERS AND SCIENCE

		BACCALAUREATE						DOCTORATE					
		1967	1968	1969	1970	1971	TOTAL	1967	1968	1969	1970	1971	TOTAL
SOCIOLOGY	M	53	54	99	136	104	446	8	15	13	11	18	65
	W	136	128	180	204	147	795	3	5	7	2	2	19
	T	189	182	279	340	251	1241	11	20	20	13	20	84
% WOMEN		72%	70%	65%	60%	59%	64%	*	20%	35%	*	10%	23%
STATISTICS	M	3	4	4	8	4	23	8	5	14	7	9	43
	W	1	5	4	5	4	19	-	-	2	3	2	7
	T	4	9	8	13	8	42	8	5	16	10	11	50
% WOMEN		*	*	*	*	*	45%	*	*	*	*	*	14%
ZOOLOGY	M	76	65	83	76	72	372	7	13	21	13	16	70
	W	31	27	25	31	35	149	3	4	4	2	4	17
	T	107	92	108	107	107	521	10	17	25	15	20	87
% WOMEN		29%	29%	24%	29%	33%	29%	*	*	16%	*	20%	20%

TABLE III — LETTERS & SCIENCE

BERKELEY DEGREES BY SEX, DEPARTMENT, AND TIME PERIOD

		BACCALAUREATE				DOCTORATE			
		1948-1952	1963-1967	1968-1971	% CHANGE	1948-1952	1963-1967	1968-1971	% CHANGE
ANTHROPOLOGY	M	80	208	262		14	49	52	
	W	45	439	588		6	12	30	
	T	125	647	850		20	61	82	
% WOMEN		36%	68%	69%	+ 33	30%	20%	36%	+ 6
ECONOMICS	M	468	571	468		37	100	106	
	W	74	121	92		1	12	14	
	T	542	692	560		38	112	120	
% WOMEN		14%	17%	16%	+ 2	3%	11%	12%	+ 9
ENGLISH	M	289	484	538		36	59	84	
	W	376	1162	1024		1	21	25	
	T	665	1646	1562		37	80	109	
% WOMEN		57%	71%	66%	+ 9	3%	26%	23%	+ 20
HISTORY	M	351	819	683		77	122	111	
	W	283	945	680		4	12	18	
	T	634	1764	1363		81	134	129	
% WOMEN		45%	54%	50%	+ 5	5%	9%	14%	+ 9
MATHEMATICS	M	132	358	330		30	130	130	
	W	30	135	127		2	5	5	
	T	162	493	457		32	135	135	
% WOMEN		19%	27%	28%	+ 9	6%	4%	4%	- 2
PHYSICS	M	247	353	218		136	275	179	
	W	5	21	13		3	6	5	
	T	252	374	231		139	281	184	
% WOMEN		2%	6%	6%	+ 4	2%	2%	3%	+ 1
POLITICAL SCIENCE	M	779	1061	831		26	74	70	
	W	329	650	362		5	6	11	
	T	1108	1711	1193		31	80	81	
% WOMEN		30%	38%	30%	-	16%	8%	14%	- 2
PSYCHOLOGY	M	429	505	779		69	89	55	
	W	275	576	772		10	36	33	
	T	704	1081	1552		79	125	88	
% WOMEN		34%	53%	50%	+ 11	13%	29%	38%	+ 25
SOCIOLOGY	M	56	158	393		1	34	57	
	W	57	539	659		-	11	16	
	T	113	697	1052		1	45	73	
% WOMEN		50%	77%	63%	+ 13	-	24%	22%	- 2
ZOOLOGY	M	346	401	296		37	58	63	
	W	55	132	118		7	15	14	
	T	401	533	414		44	73	77	
% WOMEN		14%	25%	29%	+ 15	16%	21%	18%	+ 2

COMPILED FROM RECORDS OF OFFICE OF INSTITUTIONAL RESEARCH, UNIVERSITY OF CALIFORNIA.
LUCY W. SELLS 11-3-72

TABLE IV, ON THE NEXT PAGE, SHOWS THE PERCENTAGE WOMEN AMONG FRESHMAN AND SENIOR CLASSES FOR SELECTED YEARS FROM 1950 THROUGH 1971. WHILE IT IS NOT POSSIBLE TO ESTIMATE THE NUMBER OF STUDENTS MOVING IN AND OUT OF SCHOOL OVER THE FOUR YEAR PERIODS, OR THE NUMBER OF STUDENTS WHO TOOK MORE THAN FOUR YEARS TO COMPLETE THE DEGREE, IT DOES PROVIDE A ROUGH ESTIMATE OF UNDERGRADUATE ATTRITION AT BERKELEY. IF WE COMPARE THE PERCENTAGE WOMEN FROM ONE FRESHMAN CLASS WITH THE PERCENTAGE WOMEN IN THE SENIOR CLASS FOUR YEARS LATER, WE FIND A REDUCTION WHICH APPROXIMATES THE ATTRITION RATE. WOMEN COMPRISED 44% OF THE FRESHMAN CLASS IN 1950. IN 1953, THEY COMPRISED ONLY 30% OF THE SENIOR CLASS, GIVING A DROPOFF OF 14 PERCENTAGE POINTS. OVER TWENTY YEARS, THIS MEASURE OF UNDERGRADUATE ATTRITION HAS BEEN CUT IN HALF. THIS MAY REFLECT THE IMPROVEMENT IN CONTRACEPTIVE TECHNOLOGY WHICH PROVIDES WOMEN WITH GREATER FREEDOM OF CHOICE WITH RESPECT TO PREGNANCY. DATA ON THE EFFECTS OF HAVING CHILDREN ON DOCTORAL ATTRITION ARE DISCUSSED ON PAGES 23-27. WE TURN NOW TO THE SECTION ON NATIONAL DOCTORAL PRODUCTION.

3. NATIONAL DOCTORAL PRODUCTION

THESE DATA ARE USEFUL FOR ESTIMATING POOLS OF QUALIFIED PERSONS FOR HIRING AT FACULTY LEVELS. TABLE I, ON THE FOLLOWING TWO PAGES, SHOWS THE PROPORTION OF DOCTORATES AWARDED NATIONALLY TO WOMEN BY AREA AND FIELD FOR THE YEARS 1960-1969. TABLE II, PAGES 15 AND 16, SHOWS THE DOCTORATES AWARDED BY DEPARTMENTS IN TEN SELECTED FIELDS, RATED AS "TOP FIVE" BY THE AMERICAN COUNCIL ON EDUCATION. IT SHOWS THE PERCENTAGE OF DOCTORATES AWARDED TO WOMEN FOR TWO TIME PERIODS, 1953-1958, AND 1963-1968. IT PERMITS COMPARISONS ACROSS DISCIPLINES, AND OVER TIME. THE PROPORTION OF DOCTORATES GOING TO WOMEN HAS INCREASED IN SOCIOLOGY, ENGLISH, AND POLITICAL SCIENCE. THERE HAS BEEN LITTLE INCREASE IN CHEMISTRY, ECONOMICS, MATHEMATICS, OR PHYSICS.

TABLE III, ON PAGES 17, 18, AND 19, SHOWS RECENT DOCTORAL PRODUCTION IN THE SAME 10 FIELDS, BROKEN DOWN BY INDIVIDUAL INSTITUTION. IT PERMITS COMPARISON OF BERKELEY PRODUCTION WITH COMPARABLE INSTITUTIONS IN EACH FIELD. TABLE IV, ON PAGE 20, SHOWS THE TIME COMPARISON FOR THE "SECOND FIVE" RATED DEPARTMENTS IN THE 10 FIELDS. TABLE V, PAGES 21 AND 22, SHOWS RECENT DOCTORAL PRODUCTION AT THE "SECOND FIVE" DEPARTMENTS IN 10 FIELDS, BROKEN DOWN BY INSTITUTION.

WE TURN NOW TO THE SECTION ON DROPOUT RATES AMONG WOODROW WILSON FELLOWS.

% OF WOMEN ENROLLED AS FRESHMEN AND SENIORS BY YEAR OF FALL ENROLLMENT: UNIVERSITY OF CALIFORNIA, BERKELEY, FALL 1950-FALL 1971.

	Freshmen	Seniors	Attrition
1950	44% (2,167)	24% (5,091)	-
1953	43% (2,325)	30% (3,216)	14%
1956	46% (2,724)	29% (3,648)	17%
1959	44% (3,292)	31% (3,578)	15%
1962	42% (3,972)	36% (4,210)	12%
1965	42% (3,307)	35% (4,581)	7%
1968	44% (3,645)	38% (4,442)	4%
1971	41% (3,876)	37% (4,301)	7%

Source: Compiled from CAMPUS STATISTICS, which is published annually by the Office of Institutional Research, UC, Berkeley.

% OF WOMEN ENROLLED AS GRADUATE STUDENTS BY TYPE OF ENROLLMENT AND YEAR: UNIVERSITY OF CALIFORNIA, BERKELEY, FALL 1967-FALL 1971.

	Professional Schools	Master's Program	First Year Doctoral	Advanced Doctoral	Total Enrollment
1967	46% (1,786)	26% (3,514)	18% (917)	18% (4,309)	26% (10,526)
1968	48% (1,753)	27% (3,163)	22% (911)	19% (4,314)	27% (10,141)
1969	46% (1,776)	27% (3,286)	24% (741)	20% (4,169)	28% (9,972)
1970	43% (1,789)	27% (3,206)	20% (900)	20% (3,808)	27% (9,703)
1971	40% (1,672)	27% (3,128)	24% (831)	21% (3,571)	27% (9,202)

Source: Compiled from CAMPUS STATISTICS, Office of Institutional Research, University of California, Berkeley. Number in parenthesis is basis of percentage. Read 46% of the 1,786 graduate students registered in the Professional schools in 1967 were women, compared with 18% of the 4,309 Advanced Doctoral students.

Lucy W. Sells
Department of Sociology, UC, 6-14-72

Distributed by: Project on the Status & Education of Women, AAC, 1818 R St., N.W., Washington, D.C. 20009

WEAL WOMEN'S EQUITY ACTION LEAGUE

Prepared June/1971 by the
Council for University Women's Progress
at the University of Minnesota

PROPORTION OF DOCTORATES EARNED BY WOMEN, BY AREA AND FIELD, 1960-1969

Data source: U.S. Department of Health, Education and Welfare, *Earned Degrees Conferred: Bachelor's and Higher Degrees*. A publication of the Bureau of Educational Research and Development and the National Center for Educational Statistics. Washington, D.C.: U.S. Government Printing Office. (All public and private colleges and universities in the United States known to confer doctoral degrees are included in the survey. Professional doctoral degrees, such as M.D., however, are not included.) The consecutive bulletins from which these original data were obtained are located in the Wilson Library Documents Division.

	Total Number of Doctorates Earned 1960-1969	Total Number of Doctorates Earned by Women 1960-1969	Percentage of Doctorates Earned by Women 1960-1969
Agriculture, Total	4462	79	1.77
Agriculture, General	115	1	.87
Agronomy, Field Crops	966	5	.52
Animal Science	872	21	2.41
Dairy Science	262	4	1.53
Farm Management	13	0	.00
Fish, Game or Wildlife Management (1961-1969)[1]	209	2	.95
Food Science	385	16	4.16
Horticulture	539	11	2.40
Ornamental Horticulture	14	0	.00
Poultry Science	211	7	3.32
Soil Science	568	2	.35
Agriculture, All other fields	308	10	3.25
Architecture	50	4	8.00
Biological Sciences, Total	17,708	2448	13.82
Premedical, Predental and Preveterinary Sciences	25	2	8.00
Biology, General	1949	395	20.27
Botany, General	1653	186	11.25
Zoology, General	2262	318	14.06
Anatomy and Histology	633	116	18.33
Bacteriology, etc.[2]	2096	355	16.94
Biochemistry	2695	471	17.48
Biophysics	429	32	7.46
Cytology	30	9	30.00
Ecology (1961-1969 only)	37	2	5.41
Embryology	45	11	24.44
Entomology	1097	46	4.19
Genetics	672	61	9.08
Molecular Biology (1968-1969 only)[3]	32	6	18.75
Nutrition (1961-1969 only)	156	45	28.85
Pathology	271	15	5.54
Pharmacology	783	87	11.11
Physiology	1145	168	14.67
Plant Pathology	692	19	2.75
Plant Physiology	203	12	5.91
Biological Sciences, All other fields	803	92	11.46
Business and Commerce, Total	3046	86	2.82
Business and Commerce, General	1372	33	2.41
Accounting	268	18	6.72
Finance, Banking (1967-1969 only)[4]	53	1	1.89
Marketing (1967-1969 only)[5]	66	1	1.52
Real Estate, Insurance (1967-1969 only)[6]	2	0	.00
Transportation (1967-1969 only)	7	0	.00
Business and Commerce, All other fields	1278	33	2.58
City Planning (1966-1969 only)[7]	44	2	4.55
Computer Science and Systems Analysis, Total (1964-1969 only)[8]	158	4	2.53
Computer Science	99	3	3.03
Systems Analysis	22	1	4.55
Computer Science and Systems Analysis, All other fields	37	0	.00
Education, Total	26,369	5230	19.83
Physical Education	1143	313	27.38
Health Education	88	26	29.55
Recreation	30	4	13.33
Education of the Mentally Retarded	118	36	30.51
Education of the Deaf (1964-1969 only) (1964-1969 only)[9]	6	4	66.67
Speech and Hearing Impaired	339	67	19.76
Education of the Visually Handicapped (1964-1969 only)[10]	3	1	33.33
Education of the Emotionally Disturbed (1965-1969 only)[11]	24	6	25.00
Administration of Special Education (1968-1969 only)[12]	14	4	28.57
Education of Other Exceptional Children[13]	391	126	32.23
Agricultural Education	228	2	.88
Art Education	194	52	26.80
Business or Commercial Education	300	89	29.67
Distributive Education, Retail Selling	28	6	21.43
Home Economics Education	124	123	99.19
Industrial Arts Education, Nonvocational	224	1	.45
Music Education	548	75	13.69
Trade or Industrial Education, Vocational	181	8	4.42
Specialized Teaching Fields, All other	756	261	34.52
Nursery or Kindergarten Education	14	12	85.71
Early Childhood Education	22	20	90.91
Elementary Education	1199	459	38.28
Secondary Education	966	154	15.94
Combined Elementary and Secondary Education	21	4	19.05
Adult Education	303	46	15.18
General Teaching Fields, All other	445	97	21.80
Education Administration, Supervision Finance[14]	7242	931	12.86
Counseling and Guidance	2357	488	20.70
Rehabilitation and Counselor Training (1964-1969 only)	80	14	17.50
History of Education, etc. (1964-1969 only)[15]	488	99	20.29
Education, General	6286	1183	18.82
Educational, Psychology (1964-1969 only)	875	224	25.60
Physical Education, Nonteaching (1964-1969 only)	36	9	25.00
Education, All other fields[16]	1296	286	22.07
Engineering, Total[17]	18,572	82	.44
English and Journalism, Total	6471	1541	23.81
English and Literature	6322	1523	24.09
Journalism	149	18	12.08
Fine Arts and Applied Arts, Total	4035	678	16.80
Art General	99	18	18.18
Music, Sacred Music	1473	199	13.51
Speech and Dramatic Arts	1978	314	15.87
Fine and Applied Arts, All other fields	485	147	30.31
Folklore (1965-1969 only)	29	8	27.59

	Total Number of Doctorates Earned 1960-1969	Total Number of Doctorates Earned by Women 1960-1969	Percentage of Doctorates Earned by Women 1960-1969
Foreign Languages and Literature, Total	4158	1186	28.52
Linguistics	551	133	24.14
Latin, Classical Greek	506	128	25.30
French	768	311	40.49
Italian	47	17	36.17
Portuguese	14	3	21.43
Spanish	668	217	32.49
Philology and Literature of Romance Languages	380	93	24.47
German	678	171	25.22
Other German Languages	27	5	18.52
Philology and Literature of Germanic Languages	52	9	17.31
Arabic	5	1	20.00
Chinese	14	2	14.29
Hebrew	23	1	4.35
Hindi, Urdu (1961-1969 only)	2	0	0.00
Japanese	12	2	16.67
Russian	116	28	24.14
Other Slavic Languages	68	20	29.41
Foreign Language and Literature, All other fields	227	45	19.82
Forestry	558	1	.18
Geography	663	37	5.58
Health Professions, Total	1831	168	9.18
Hospital Administration	20	1	.50
Medical Technology	2	0	.00
Nursing, Public Health Nursing	18	17	94.44
Optometry	16	1	6.25
Pharmacy	563	24	4.26
Physical Therapy, Physiotherapy	1	0	.00
Public Health	418	62	14.83
Radiologic Technology	3	0	.00
Clinical Dental Services	24	4	16.77
Clinical Medical Services	302	31	10.26
Clinical Veterinary Services	250	4	1.60
Health Professions, All other fields	214	24	11.21
Home Economics, Total	514	392	76.26
Home Economics, General	104	101	97.12
Child Development, Family Relations	174	87	50.00
Clothing and Textiles	53	52	98.11
Foods and Nutrition	134	108	80.60
Institution Management or Administration	6	6	100.00
Home Economics, All other fields	43	38	88.37
Law	268	12	4.48
Library Science	140	38	27.14
Mathematical Sciences, Total	6186	401	6.50
Mathematics	5538	348	6.46
Statistics	781	53	6.79
Philosophy, Total	1701	188	11.05
Philosophy	1520	155	10.20
Scholastic Philosophy	181	33	18.23
Physical Sciences, Total	25,736	1179	4.58
Physical Sciences, General	93	3	3.23
Astronomy	421	29	6.89
Chemistry	12,963	884	6.82
Metallurgy	213	0	.00
Meterology	245	2	.82
Pharmaceutical Chemistry (1961-1969 only)	289	13	.50
Physics	8415	168	2.00
Geology	2143	53	2.47
Geophysics	203	3	1.48
Oceanography	222	4	1.80
Earth Sciences, All other fields [18]	170	2	1.18
Physical Science, All other fields	359	18	5.01
Psychology, Total	9135	1845	20.20
General Psychology	7071	1355	19.30
Clinical Psychology (1961-1969 only)	651	163	25.04
Counseling and Guidance	138	33	23.91
Social Psychology (1961-1969 only)	309	68	22.01
Rehabilitation Counselor Training (1964-1969 only)	36	8	22.22
Educational Psychology (1964-1969 only)	137	37	27.01
Psychology, All other fields (1964-1969 only)	793	171	21.56
Religion, Total	2825	141	4.99
Religious Education, Bible	368	49	13.32
Theology	1417	49	3.46
Religion, Liberal Arts Curriculum	860	39	4.54
Religion, All other fields	180	4	2.22
Social Sciences, Total	18,662	2072	11.10
Social Sciences, General	261	27	10.34
American Studies, Civilization, Culture	257	41	15.95
Anthropology	942	202	21.44
Area or Regional Studies	384	46	11.98
Economics	3898	219	5.62
History	4943	579	11.71
International Relations	425	33	7.76
Political Science or Government	2876	253	8.80
Sociology	2361	403	17.07
Agricultural Economics	1165	12	1.03
Foreign Service Programs	11	1	9.09
Industrial Relations	96	4	4.17
Public Administration	283	23	8.13
Social Work, Social Administration	480	174	36.25
Social Science, All other fields	280	55	19.64
Trade or Industrial Training	84	0	.00
Broad General Curriculums and Miscellaneous Total	726	107	14.74
Arts, General Programs	39	9	23.08
Sciences, General Programs	84	9	10.71
Arts and Sciences, General Programs	40	5	12.50
Teaching of English as a Foreign Language	27	10	37.04
All Other Fields of Study [19]	536	74	13.81
Total All Fields (areas) reported:	154,111	17,929	11.63

1. When information was available from 1961-1965 (this field was not given as a separate category in 1960-1961), proportions were computed based on information available. If the field was not listed as a separate category for more years than 1960-1961, the information was included in the residual category. Exceptions are noted.
2. Includes Bacteriology, Virology, Mycology, Parasitology and Microbiology.
3. The status of this field prior to 1968, when it was considered separately, is not clear.
4, 5, and 6. As in 3, the same observation applies.
7 and 8. These entire areas are new.
9, 10, 11, and 12. Subsumed under other categories in earlier years.
13. Includes: Special Learning Disability, Education of the Crippled, Education of the Multiple Handicapped.
14. Includes Curriculum Instruction as well. These fields were separated for all but year 1963-1964, so it was necessary to combine them.
15. Includes History, Philosophy and Theory of Education.
16. Includes the recently listed field of Education Specialist.
17. A breakdown on Engineering was omitted from *Earned Degrees Conferred: Bachelor's and Higher Degrees* for the four academic years 1960 through 1964. Other sources investigated provided breakdown by field but not by sex.
18. Includes recent field, "Earth Sciences, General."
19. Includes recent field "Interarea Fields of Study."

% OF PH. D.'s AWARDED TO WOMEN BY THE TOP FIVE GRADUATE INSTITUTIONS, IN SELECTED DISCIPLINES

Compiled by Lucy W. Sells,
Department of Sociology
University of California at Berkeley

DISCIPLINE	1953-1958				1963-1968			
	Men	Women	Total	% Women	Men	Women	Total	% Women
Sociology	199	37	236	16	191	59	250	24
English	363	50	413	12	387	113	500	23
Psychology	284	68	352	19	434	123	557	22
Anthropology	112	21	133	16	179	41	220	19
History	465	44	509	9	750	97	847	12
Political Science	271	13	284	5	316	40	356	12
Chemistry	748	38	786	5	696	51	747	7
Economics	408	15	423	4	480	36	516	7
Mathematics	227	8	235	3	465	20	485	4
Physics	445	8	450	2	872	24	896	3

Sources: U. S. Office of Education, EARNED DEGREES CONFERRED, Circulars Numbered 417, 461, 499, 527, and 570, for degrees conferred in 1953-1954 through 1957-58, respectively. After 1962, EARNED DEGREES CONFERRED was published by the National Center for Educational Statistics, Washington, D. C. The Top Five rankings for the 1953-1958 period are based on Keniston's 1957 ranking, cited in Allan M. Cartter, AN ASSESSMENT OF QUALITY OF GRADUATE EDUCATION, American Council on Education, Washington, D. C., 1966. The Top Five rankings for 1963-1968 are based on Kenneth D. Roose and Charles J. Andersen, A RATING OF GRADUATE EDUCATION, American Council on Education, Washington, D. C., 1970.

The Top Five Departments for each discipline and time period are.

Sociology: 1957: Harvard, Columbia, Chicago, Michigan, Cornell
1970: Berkeley, Harvard, Chicago, Columbia, Michigan

English: 1957: Harvard, Yale, Columbia, Berkeley, Princeton
1970: Yale, Berkeley, Harvard, Chicago, Princeton

Psychology: 1957: Harvard, Michigan, Yale, Berkeley, Stanford
1970: Stanford, Michigan, Berkeley, Harvard, Illinois

Anthropology: 1957: Chicago, Harvard, Columbia, Berkeley, Yale
1970: Chicago, Berkeley, Michigan, Pennsylvania, Harvard

History: 1957: Harvard, Columbia, Yale, Berkeley, Wisconsin
1970: Harvard, Yale, Berkeley, Princeton, Stanford, Columbia, Wisconsin

Political Science:	1957:	Harvard, Chicago, Berkeley, Columbia, Princeton
	1970:	Yale, Harvard, Berkeley, Chicago, Michigan
Chemistry:	1957:	Harvard, Berkeley, Illinois, Chicago, Wisconsin
	1970:	Harvard, Cal. Tech., Stanford, Berkeley, M.I.T.
Economics:	1957:	Harvard, Chicago, Yale, Columbia, Berkeley, Stanford
	1970:	Harvard, M.I.T., Chicago, Yale, Berkeley
Mathematics:	1957:	Harvard, Chicago, Princeton, Berkeley, Michigan
	1970:	Berkeley, Harvard, Princeton, Chicago, M.I.T.
Physics:	1957:	Berkeley, Harvard, Columbia, Princeton, Chicago
	1970:	Cal. Tech., Berkeley, Harvard, Princeton, Stanford, M.I.T.

DOCTORATES GRANTED FROM 1963-1968 BY TOP FIVE GRADUATE FACULTIES, BY SEX AND DISCIPLINE

SOCIOLOGY

University	Men	Women	Total	% Women
1*Berkeley	34	14	48	29
1* Harvard	25	9	34	26
3 Chicago	58	12	70	17
4* Columbia	44	19	63	30
4* Michigan	30	5	35	14
Total	191	59	250	24%
*Tie in rating.				
1969-70	67	26	93	28%

PSYCHOLOGY

University	Men	Women	Total	% Women
1 Stanford	69	20	89	22
2 Michigan	130	31	161	19
3 Berkeley	89	36	125	29
4 Harvard	57	21	78	27
5 Illinois	89	15	104	14
Total	434	123	557	22%
1969-70	115	47	162	29%

ENGLISH

University	Men	Women	Total	% Women
1 Yale	71	35	106	33
2* Berkeley	62	23	85	27
2* Harvard	160	43	203	21
4* Chicago	39	10	49	20
4* Princeton	55	2	57	4
Total	387	113	500	23%
*Tie in rating.				
1969-70	102	34	136	25%

ANTHROPOLOGY

University	Men	Women	Total	% Women
1 Chicago	46	7	53	14
2 Berkeley	49	12	61	20
3 Michigan	24	2	26	--
4 Pennsylvania	12	4	16	--
5 Harvard	48	16	64	25
Total	179	41	220	19%
1969-70	41	18	59	31%

Sources: Degree figures compiled from EARNED DEGREES CONFERRED, published annually by U. S. Office of Education, National Center for Educational Statistics, Washington, D. C., 1963, 1964, 1965, 1966, and 1967. Rating of quality of graduate faculty taken from A RATING OF GRADUATE PROGRAMS, Kenneth D. Roose and Charles J. Andersen, Washington, D. C., American Council on Education, 1970.

1969-70 data from same schools in each field -- U.S.O.E. 72-2, EARNED DEGREES CONFERRED.

HISTORY

University	Men	Women	Total	% Women
1* Harvard	163	25	188	13
1* Yale	63	16	79	--
3 Berkeley	122	12	134	9
4 Princeton	47	--	47	--
5* Columbia	146	32	178	18
5* Stanford	46	4	50	8
5* Wisconsin	163	8	171	5
Total	750	97	847	12%
*Tie in rating.				
1969-70	239	43	282	15%

POLITICAL SCIENCE

University	Men	Women	Total	% Women
1 Yale	30	5	35	14
2 Harvard	114	20	134	15
3 Berkeley	74	6	80	8
4 Chicago	48	6	54	11
5 Michigan	50	3	53	6
Total	310	41	351	12%
1969-70	58	10	68	15%

CHEMISTRY

University	Men	Women	Total	% Women
1 Harvard	117	12	129	9
2 Cal. Tech.	83	2	85	2
3* Stanford	83	9	92	10
3* Berkeley	230	14	244	6
5 M.I.T.	183	14	197	7
Total	696	51	747	7%
*Tie in rating.				
1969-70	140	7	147	5%

ECONOMICS

University	Men	Women	Total	% Women
1* Harvard	138	13	151	9
1* M.I.T.	101	4	105	4
3 Chicago	69	3	72	4
4 Yale	71	4	75	5
5 Berkeley	101	12	113	11
Total	480	36	516	7%
*Tie in rating.				
1969-70	126	5	131	4%

PHYSICS

University	Men	Women	Total	% Women
1* Cal Tech	78	3	81	4
1* Berkeley	275	6	281	2
1* Harvard	113	3	116	3

*Tie in rating.

MATHEMATICS

University	Men	Women	Total	% Women
1* Berkeley	147	7	154	5
1* Harvard	68	3	71	4
3 Princeton	72	-	72	-

*Tie in rating.

Physics cont'd.:

University	Men	Women	Total	% Women
4 Princeton	107	1	108	1
5* Stanford	105	3	108	3
5* M.I.T.	194	8	202	4
Total	872	24	896	3%

*Tie in rating.

1969-70	169	5	164	5%

Mathematics cont'd.:

University	Men	Women	Total	% Women
4 Chicago	69	5	74	7
5 M.I.T.	109	5	114	4
Total	465	20	485	4%

169-70	94	6	100	6%

* * * * * * * *

Distributed by the PORJECT ON THE STATUS AND EDUCATION OF WOMEN, Association of American Colleges, 1818 R Street, N.W., Washington, D. C. 20009.

APRIL, 1972

% of PH. D.'s Awarded to Women by the Second Five Graduate Institutions, in Selected Disciplines

Discipline	1953-1958				1963-1968			
	Men	Women	Total	% Women	Men	Women	Total	% Women
Sociology	103	14	117	12%	151	16	167	10%
English	237	47	284	17%	362	95	457	21%
Psychology	379	74	453	16%	287	89	376	24%
Anthropology	56	2	58	3%	105	30	135	22%
History	154	18	172	10%	153	20	173	12%
Political Science	125	8	133	6%	189	21	210	10%
Chemistry	457	25	482	5%	837	85	922	9%
Economics	90	3	93	3%	284	10	294	3%
Mathematics	148	17	165	10%	487	44	531	8%
Physics	322	6	328	2%	529	16	545	3%

Sources: U. S. Office of Education, EARNED DEGREES CONFERRED, Circulars numbered 417, 461, 499, 527, and 570 for degrees conferred in 1953-1954 through 1957-58, respectively. After 1962, EARNED DEGREES CONFERRED was published by the Natioanl Center for Educational Statistics, Washington, D. C. The Second Five rankings for the 1953-1958 period were based on Keniston's 1957 ranking, cited in Allan M. Cartter, AN ASSESSMENT OF QUALITY OF GRADUATE EDUCATION, American Council on Education, Washington, D. C., 1966. The Second Five rankings for 1963-1968 are based on Kenneth D. Roose and Charles J. Andersen, A RATING OF GRADUATE EDUCATION, American Council on Education, Washington, D. C., 1970.

The Second Five Departments for each discipline and time period are:

Sociology:	1957	Berkeley, Minnesota, North Carolina, Washington (Seattle), Yale.
	1970	Wisconsin, North Carolina, *Cornell, *Hopkins, *Northwestern, Princeton
English:	1957	Wisconsin, Michigan, Chicago, *Cornell, *Hopkins (* means tied).
	1970	*Stanford, *Columbia, Hopkins, *Cornell, *Virginia.
Psychology:	1957	Minnesota, Illinois, Iowa, Wisconsin, Chicago.
	1970	Pennsylvania, *Minnesota, *Wisconsin, *Yale, UCLA
Anthropology:	1957	Pennsylvania, Michigan, UCLA, Cornell, Northwestern.
	1970	Yale, *UCLA, *Columbia, *Stanford, *Cornell.
History:	1957	Princeton, Chicago, Cornell, Hopkins, Pennsylvania.
	1970	*Chicago, *Michigan, Cornell
Political Science:	1957	Michigan, Yale, Wisconsin, Minnesota, Cornell.
	1970	* MIT, *Stanford, Wisconsin, Princeton, North Carolina.
Chemistry:	1957	Yale, Cornell, Columbia, Minnesota, UCLA.
	1970	Illinois, UCLA, *Chicago, *Columbia, *Cornell, *Wisconsin
Economics:	1957	Princeton, Hopkins, Michigan, Minnesota.
	1970	Princeton, *Stanford, *Michigan, *Minnesota, *Pennsylvania.
Mathematics:	1957	Yale, Columbia, NYU, Stanford, Cornell.
	1970	Stanford, Yale, NYU, Wisconsin, *Michigan, *Columbia.
Physics:	1957	Stanford, Cornell, Illinois, Michigan, Wisconsin.
	1970	*Illinois, *Columbia, (7), *Chicago, *Cornell (9)

Compiled by Lucy W. Sells 4-10-72
Department of Sociology, UC, Berkeley.

DOCTORATES GRANTED FROM 1963-1968 BY SECOND FIVE GRADUATE FACULTIES, BE SEX AND DISCIPLINE

Psychology

University	Men	Women	Total	% Women
6 Pennsylvania	36	8	44	18%
7*Minnesota	73	27	100	27%
7*Wisconsin	43	11	54	20%
7*Yale	51	14	65	22%
10 UCLA	84	29	113	26%
Total	287	89	376	24%

English

University	Men	Women	Total	% Women
6*Stanford	64	16	80	20%
6*Columbia	197	60	257	23%
8 Hopkins	16	3	19	16%
9*Cornell	50	11	61	18%
9*Virginia	35	5	40	12%
Total	362	95	457	21%

* Tie in ranking.

Anthropology

University	Men	Women	Total	% Women
6 Yale	15	1	16	6%
7* UCLA	25	11	36	31%
7* Columbia	32	11	43	26%
9* Stanford	13	4	17	24%
9* Cornell	20	3	23	13%
Total	105	30	135	22%

History

University	Men	Women	Total	% Women
8* Chicago	76	7	83	8%
8* Michigan	37	6	43	14%
10 Cornell	40	7	47	15%
Total	153	20	173	12%

Political Science

University	Men	Women	Total	% Women
6* MIT	34	7	41	17%
6* Stanford	23	5	28	18%
8 Wisconsin	31	6	37	16%
9 Princeton	57	-	57	-
10 North Car.	44	3	47	6%
Total	189	21	210	10%

Sociology

University	Men	Women	Total	% Women
6 Wisconsin	47	2	49	4%
7 North Car.	25	4	29	14%
9* Cornell	30	5	35	14%
9* Hopkins	13	1	14	7%
9* Northwest.	14	3	17	18%
9* Princeton	22	1	23	4%
Total	151	16	167	10%

Note that %ages based on N's of less than 50 are unstable. Total % figure is most reliable.

Sources: Degree figures compiled from EARNED DEGREES CONFERRED, Published annually by U. S. Office of Education, National Center for Educational Statistics, Washington, DC, 1963, 1964, 1965, 1966, and 1967. Rating of quality of graduate faculty taken from Kenneth D. Roose and Charles J. Andersen, Washington, DC American Council on Education, 1970.

Lucy W. Sells 4-10-72
Department of Sociology
UC Berkeley

	Chemistry			
University	Men	Women	Total	% Women
6 Illinois	238	27	265	10%
7 UCLA	93	7	100	7%
8* Chicago	104	9	113	8%
8* Columbia	85	20	105	19%
8* Cornell	115	12	127	9%
8* Wisconsin	202	10	212	5%
Total	837	85	922	9%

	Mathematics			
University	Men	Women	Total	% Women
6 Stanford	77	-	77	-
7 Yale	42	6	48	12%
8 NYU	112	22	134	16%
9 Wisconsin	111	2	113	2%
10* Michigan	92	8	100	8%
10* Columbia	53	6	59	10%
Total	487	44	531	8%

	Economics			
University	Men	Women	Total	% Women
6 Princeton	49	-	49	-
7* Stanford	47	-	47	-
7* Michigan	46	4	50	8%
7* Minnesota	47	2	49	4%
7* Pennsylvania	95	4	99	4%
Total	284	10	294	4%

	Physics			
University	Men	Women	Total	% Women
7* Illinois	155	5	160	3%
7* Columbia	128	8	136	6%
9* Chicago	95	1	96	1%
9* Cornell	151	2	153	1%
Total	529	16	545	3%

	Total Top Ten Departments			
Discipline	Men	Women	Total	% Women
Psychology	721	212	933	23%
English	749	208	957	22%
Anthropology	284	71	355	20%
Sociology	342	75	417	18%
History	903	117	1020	11%
Political Sci.	505	61	566	11%
Chemistry	1533	136	1669	8%
Economics	764	46	810	6%
Mathematics	952	64	1016	6%
Physics	1401	16	1441	3%

Lucy W. Sells
January 7, 1973

4. DROPOUT DATA ON WOODROW WILSON FELLOWS

These data come from a secondary analysis of Mooney's 1966 study of the Woodrow Wilson Fellows who entered graduate school from 1958 through 1963. The Fellows were selected by professors while still seniors in college, for special promise in a career of college teaching. Because of the method of their selection, they represent a biased sample of some of the best graduate students in their entering class. Other things being equal, attrition rates should be lower among Woodrow Wilson Fellows than in the total population of graduate students. At the time of the study, 49% of the Fellows had not yet earned the doctorate, AND were no longer in school. Among the men, 44% were thus defined as dropouts, and among the women, 64% were thus defined. There is a sex difference in dropouts of twenty percentage points.

Table I shows both sex differences and discipline differences in the percentage of dropouts among the Woodrow Wilson Fellows. The sex differences can be read across the rows, and the discipline differences down the columns. Within the Humanities, there is a small, but statistically significant, difference in the percentage of dropouts in English and Philosophy, six percentage points. The difference between English and all other Humanities is larger, twelve percentage points. Within the Social Sciences, there is a difference of fourteen percentage points in dropouts between History Fellows and Psychology Fellows. Within the Physical Sciences, there is a difference of twelve percentage points between students in Mathematics and Chemistry.

In the Humanities, the sex difference is fourteen percentage points. In the Social Sciences, it is eighteen percentage points, and in the Physical Sciences, it is twenty-eight percentage points. It is interesting to note that while the dropout RATE is lower for women in the Physical Sciences than in the Humanities, the magnitude of the sex differences increases as we look from the Humanities to Social Sciences to Physical Sciences.

Table II shows the sex and discipline differences in attrition when second year financial support is taken into account. Among those with no financial support during the second year of graduate school, the original sex difference of twenty percentage points remains. Among those with any second year financial support, the sex difference is reduced to nine percentage points. For men, the effect of second year support is to reduce dropouts by fourteen percentage points. For women, the effect is to reduce dropouts by twenty-six percentage points. The effect of second year support is even more dramatic when field is controlled. It makes a difference of twenty-nine percentage points among women in the Humanities, and forty percentage points among women in the Physical Sciences.

Table III shows the effect of parenthood on dropout rates for men and women, by field. For men, regardless of field, having children makes no statistically significant difference. For women, having children makes a difference of thirteen percentage points in the Humanities, eleven in the Social Sciences, and thirty-one in the Physical Sciences. Unfortunately, it is not possible to infer from the table whether women drop out of graduate school because they have babies, or whether they have babies as a face-saving alternative to trying to succeed in a discriminatory graduate system.

Table IV shows the effect on sex and disciplin differences in attrition when faculty rating of Woodrow Wilson Fellows was controlled. The assumption was that in a pure meritocracy, where talent and willingness to work are the primary determinants of "success," dropout rates would be low among those who were rated "Excellent" and high among those who were rated "Average to Dreadful."

In fact, the zero-order difference of twenty percentage points is specified, rather than being interpreted, in the Lazarsfeld sense. When graduate rating is controlled, the sex difference increases to twenty-six points among the excellent students. When field is also controlled, it increases to thirty-eight points among the "Excellent" students in the Physical Sciences.

Clearly, something besides meritocracy was operating on the careers of Woodrow Wilson Fellows in the early sixties. Research is needed to isolate the factors which are still operating differently on men and women, and the factors which have changed in the past decade.

The tables point to three fruitful areas for further research. First is the complex relationship between financial support and reduction in dropouts. Second is the relationship between parenthood and dropouts. Third is the relationship between faculty rating of students, and their performance.

TABLE I

WOODROW WILSON FELLOWS, 1958-1963
% DROPOUTS BY SEX AND DISCIPLINE

	Men	Women	Sex Difference	Total
Humanities				
English	51% (886)	68% (633)	E = 17	58% (1519)
Modern Languages	51% (345)	59% (308)	E = 8 NS	55% (653)
Classics	51% (124)	57% (56)	E = 6 NS	53% (180)
Philosophy	50% (381)	63% (63)	E = 13 NS	52% (444)
Other Humanities	64% (230)	79% (132)	E = 15	70% (362)
Total Humanities	52% (1966)	66% (1192)	E = 14	58% (3158)
Social Sciences				
History	48% (726)	69% (251)	E = 21	53% (977)
Political Science	48% (413)	73% (115)	E = 25	53% (528)
Economics	52% (324)	59% (49)	E = 7 NS	53% (373)
Anthropology	46% (92)	60% (45)	E = 14 NS	50% (137)
Sociology	44% (90)	55% (56)	E = 11 NS	49% (146)
Psychology	32% (159)	51% (85)	E = 19	39% (244)
Other Social Sciences	42% (319)	67% (66)	E = 25	46% (385)
Total Social Sciences	46% (2123)	64% (667)	E = 18	51% (2790
Physical Sciences				
Mathematics	31% (479)	54% (56)	E = 23	34% (535)
Physics	26% (428)	70% (47)	E = 44	31% (475)
Biological Sciences	20% (112)	36% (69)	E = 16	26% (181)
Chemistry	14% (208)	58% (50)	E = 44	22% (258)
Other Physical Sciences	31% (67)	70% (19)	E = 31	41% (86)
Total Physical Sciences	26% (1294)	54% (241)	E = 28	30% (1535)
Total Woodrow Wilson Fellows	44% (5383)	64% (2100)	E = 20	49% (7483)
Field Difference	E = 26	E = 12		E = 28

TABLE II

WOODROW WILSON FELLOWS, 1958-1963
% DROPOUTS BY SEX, FIELD, AND SECOND YEAR SUPPORT

	No Support			Any Support			Support Effect	
	Men	Women	Sex Effect	Men	Women	Sex Effect	Men	Women
Humanities	57% (1357)	72% (947)	E = 15	43% (609)	43% (245)	E = 0 N S	E = 14	E = 29
Social Sciences	51% (1331)	69% (484)	E = 18	38% (792)	52% (183)	E = 14	E = 13	E = 17
Physical Sciences	33% (758)	66% (169)	E = 33	16% (536)	26% (72)	E = 10 N S	E = 17	E = 40
Field Effect	E = 24	E = 6 N S		E = 27	E = 17			
Total Woodrow Wilson Fellows	49% (3428)	70% (1599)	E = 21	35% (1887)	44% (500)	E = 9	E = 14	E = 26

TABLE III

WOODROW WILSON FELLOWS: 1958-1963
% DROPOUTS BY SEX, FIELD, AND PARENTHOOD

	No Children			Any Children			Parenthood Effect	
	Men	Women	Sex Effect	Men	Women	Sex Effect	Men	Women
Humanities	52% (1677)	64% (1042)	E = 12	54% (289)	77% (150)	E = 23	E = 2 N S	E = 13
Social Sciences	46% (1776)	63% (571)	E = 17	49% (347)	74% (96)	E = 25	E = 3 N S	E = 11
Physical Sciences	26% (1117)	49% (197)	E = 23	27% (177)	80% (44)	E = 53	E = 1 N S	E = 31
Field Effect	E = 26	E = 15		E = 27	E = 6 N S			
Total Woodrow Wilson Fellows	43% (4570)	62% (1810)	E = 19	46% (813)	77% (290)	E = 31	E = 3 N S	E = 15

THE ORIGINAL MOONEY DATA WERE OBTAINED FOR SECONDARY ANALYSIS BY PERMISSION OF MRS. JANET MITCHELL, DIRECTOR OF THE WOODROW WILSON DISSERTATION FELLOWSHIP PROGRAM.

THE NUMBER IN PARENTHESIS IS THE TOTAL NUMBER OF CASES ON WHICH THE PERCENTAGE IS BASED. UNDERLINED VALUES OF EPSILON (E) ARE STATISTICALLY SIGNIFICANT AT THE .05 LEVEL, USING A CONSERVATIVE ESTIMATE AND A TWO TAILED TEST.

TABLE IV

% DROPOUTS AMONG WOODROW WILSON FELLOWS, BY FIELD, SEX, AND GRADUATE RATING

	HUMANITIES			SOCIAL SCIENCES			PHYSICAL SCIENCES			TOTAL		
	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL	MEN	WOMEN	TOTAL
EXCELLENT	42% (265)	63% (144)	49% (409)	39% (341)	54% (78)	42% (419)	12% (254)	50% (48)	18% (302)	32% (860)	58% (270)	38% (1130)
	E = 21			E = 15			E = 38			E = 26		
VERY GOOD	54% (227)	65% (130)	58% (357)	47% (286)	75% (107)	55% (393)	23% (164)	50% (34)	28% (198)	44% (677)	67% (271)	50% (948)
	E = 15			E = 28			E = 27			E = 23		
AVERAGE TO DREADFUL	67% (168)	85% (99)	74% (267)	61% (182)	77% (52)	65% (234)	51% (105)	67% (24)	54% (129)	61% (455)	80% (175)	66% (630)
	E = 18			E = 16			E = 16 NS			E = 19		
TOTAL OF THOSE WITH GRADUATE RATINGS	52% (660)	69% (373)	58% (1033)	47% (809)	68% (237)	52% (1046)	23% (523)	54% (106)	28% (629)	42% (1992)	67% (716)	49% (2708)
	E = 17			E = 21			E = 31			E = 25		
GRADUATE RATING EFFECT WITHIN FIELD: E =	-25	-22	-25	-22	-23	-23	-39	-17	-36	-29	-22	-28

FIELD EFFECT WITHIN GRADUATE RATINGS:

EXCELLENT	E = 30 AMONG THE MEN	E = 13 AMONG THE WOMEN	E = 31 AMONG TOTAL
VERY GOOD	E = 31 AMONG THE MEN	E = 15 AMONG THE WOMEN	E = 30 AMONG TOTAL
AVERAGE TO DREADFUL	E = 16 AMONG THE MEN	E = 18 AMONG THE WOMEN	E = 20 AMONG TOTAL
TOTAL	E = 29 AMONG THE MEN	E = 15 AMONG THE WOMEN	E = 38 AMONG TOTAL

NOTE THAT FIELD EFFECTS WITHIN GRADUATE RATINGS ARE NOT STATISTICALLY SIGNIFICANT AMONG THE WOMEN BECAUSE THERE ARE SO FEW WOMEN IN EACH CELL IN THE PHYSICAL SCIENCES.

We turn now to the section on Affirmative Action materials provided by the Association of American Colleges, 1818 R Street, N. W., Washington, DC 20009. ((Phone: (202) 387-3760))

5. AFFIRMATIVE ACTION MATERIALS

This section includes:

i. A list of recruiting aids, in the form of rosters of women in a variety of fields. These can be used to show that there are qualified women eligible for hiring.

ii. A list of Women's Caucuses and Committees in Professional Associations. These can be used both for recruiting, and for women on the faculty and students to tie into the national communications network of women in their respective fields.

iii. A summary of Affirmative Action Information which spells out Federal policy on twenty-five Affirmative Action issues. These are useful references.

i. Recruiting Aids - Rosters

1. Women Architects

a. The Association of Collegiate Schools of Architecture is compiling a list of female and minority members interested in teaching in schools of Architecture. For further information, or to have your name included on the list, write: ACSA, 1785 Massachusetts Avenue, N. W., Washington, DC 20036.

b. The Alliance of Women in Architecture is gathering the names and addresses of every woman in the U. S. who is currently or has ever been a student of Architecture. For information, write AWA, 18 E. 13th Street, New York, NY 10003.

2. Women Engineers, Scientists, Medical and Paramedical Specialists

Compiled by the Biophysical Society and the Association of Women in Science, this registry includes over 5,000 women. Write: Dr. Judith G. Pool, Co-President, Association of Women in Science, Stanford Medical School, Stanford University, Stanford, CA 94305.

3. Women Historians

Available from: American Historical Association, 400 A Street, S. E., Washington, DC 20003. ($5.00 contributions welcomed.) Women wishing to be on the roster should contact AHA at the above address.

4. Women Immunologists

The American Association of Immunologists has a list of women members. For information, write: Dr. Helen C. Rauch (Chairperson of the Committee on the Status of Women), Department of Medical Microbiology, Stanford University, Stanford, CA 94305.

5. Women Lawyers

The American Bar Association's Women's Rights Unit is compiling a state by state roster of women lawyers. Write: Dr. Lee Ellen Ford, 336 Hickory Street, Butler, IN 46721.

6. Women Librarians

The American Library Association's Social Responsibilities Task Force on Women is compiling a roster of women qualified for administrative and specialized library positions. Write: Margaret Myers, Graduate School of Library Service, Rutgers University, New Brunswick, NJ 08903.

7. Women Physicists

Available for $5.00 from: American Institute of Physics Placement Service, 335 West 45th St., New York, NY 10017. Women Physicists wishing to be on the roster should write E. Baranger, Committee on the Status of Women in Physics, Room 6-405, Massachusetts Institute of Technology, Cambridge, MA 02139.

8. Women Political Scientists

The American Political Science Association has a roster of women. Single copies are available free from: APSA, (Attn: Committee on the Status of Women in the Profession), 1527 New Hampshire Ave., N. W., Washington, DC 20036.

9. Women Psychologists

The American Psychological Association roster of women psychologists, based on a 1971 survey of women APA members, is available from Dr. Tena Cummings, American Psychological Association, 1200 17th Street, Washington, DC 20036.

10. Women in Religion

A registry of Women in Religious Studies, containing approximately 200 names of women holding or seeking positions in the academic field of religious studies, was compiled by the Women's Caucus --Religious Studies. Available for $1.00 from: Women's Caucus -- Religious Studies, Box 6309, Station B, Vanderbilt University, Nashville, TN 37235.

11. Women Theologians

Elizabeth Dempster, Interim Director, Boston Theological Institute, Women's Placement Service, 45 Francis Avenue, Cambridge, MA 02138.

DIRECTORY OF WOMEN'S ORGANIZATIONS AND LEADERS

A comprehensive directory, Women's Organizations and Leaders -- 1973, is published by Today Publications. This provides an up-to-date listing of the names, addresses, and telephone numbers of relevant organizations and lists individuals recognized as leaders in the women's movement. This directory is available from Today Publications for $25.00. Today Publications, National Press Building, Washington, DC.

RESOURCE AND REFERRAL CENTER FOR WOMEN IN HIGHER EDUCATION

Because there are so few women in high-level administrative and academic positions in colleges and universities, the Ford Foundation has given a grant of $50,000 to establish a Regional Resource Center for Women in Higher Education in New England. The Center will develop an informal placement and referral service, prepare position papers on non-discriminatory personnel policies, meet with college presidents to discuss the status of women, and plan a regional conference of women and faculty administrators. For further information, write: Dr. Lily Hornig, Coordinator, Higher Education Resource Center, Brown University, Providence, RI, 02912.

YES, THERE ARE WOMEN ENGINEERS

The Society of Women Engineers has begun a Career Information Clearinghouse to help link up members seeking jobs and employers looking for women engineers. For further information contact: SWE, 345 East 47th Street, New York, NY 10017. (Telephone: 212-752-6800, ext. 551.)

Also, a recent ENGINEERING MANPOWER BULLETIN, by John Alden, Women in Engineering, includes data on women engineering graduates, and their distribution by kind of work. For a copy, send $1.50 to Engineering Manpower Commission, 345 East 47th St., New York, NY 10027. A detailed directory (Engineering and Technical Enrollments, Fall 1971) is available for $20.00 from the same address.

MLA "JOB OPPORTUNITIES NESLETTER"

Sponsored by the Women's Caucus of the Modern Language Association, this newsletter lists job openings in English, Modern Foreign Languages (post-high school), women's studies, administration, and other work or study possibilities for academics. Send $1.00 to Gloria DeSole, Skidmore College, Saratoga Springs, NY 12866.

COOPERATIVE COLLEGE REGISTRY

An employment registry of women and minorities is available to educational institutions from the Cooperative College Registry, One Dupont Circle, Washington, DC 20036. For further information contact David Lowdermilk, Director, at the above address, or call (202) 223-2807.

WOMEN'S NEWSLETTERS ACCEPT ADS

Two widely read women's newsletters, Women Today and the Spokeswoman run "help wanted ads. Women Today, published by Today Publications, National Press Building, Washington, DC 20004 lists top positions in educational institutions, private industry, and government, free of charge. The Spokeswoman, published by Ms. Susan Davis, 5464 South Shore Drive, Chicago, IL 60515 has a paid "Help Wanted" section for professional and managerial jobs.

Subscription to Women Today (biweekly) is $15.00 a year, and $25.00 for two years. Subscription to the Spokeswoman is $7.00 a year for individuals, and $12.00 a year for institutions.

CHRONICLE OF HIGHER EDUCATION LISTS JOBS

The Chronicle of Higher Education accepts paid advertisements for positions in higher education. Notices for the Chronicle's "Bulletin Board", which includes "Positions Wanted" and "Positions Available" cost 25¢ a word, or $15.00 an inch, and may be submitted by mail or telephone. For further information, write: "BULLETIN BOARD", The Chronicle of Higher Education, 1717 Massachusetts Avenue, Washington, DC 20036, or call (202) 667-3344.

ADS ACCEPTED IN WOMEN SCIENTISTS NEWSLETTER

The Newsletter of the Association of Women in Science (Published quarterly) has a section on "Employment information which includes both "Positions wanted" and "Positions available." Announcement of employment information should be sent to: Dr. Susan Langreth, Rockefeller University, New York, 10021.

RECRUITING MINORITY WOMEN

Many of the professional associations, included in the "Listing of Women's Caucuses and Professional Associations below also have black and/or minority caucuses and committees. For details regarding such groups and any referral or job placement sefvices offered, write to the professional organization directly.

I Studies and Surveys

AMERICAN BAR ASSOCIATION SURVEY. The American Bar Association made a survey in 1969-70 which found that blacks were 2.7% of the total law school enrollment, and of the female lawyers and judges in the country, 2.3% are black. For a free summary of the survey, write the American Bar Association, 1155 60th Street, Chicago, IL 60637.

DIRECTORY OF AFRO-AMERICAN RESOURCES. Lists, describes and cross-indexes professional associationfs of blacks, disciplinary committees concerned with blacks, data sources, and study Centers. Available from Order Department, R. R. Bowker Company, P. O. Box 1807, Ann Arbor, MI 41806. Cost: $19.95.

DIRECTORY OF MINORITY COLLEGE GRADUATES 1971-72. Prepared by the Manpower Administration of the Department of Labor, this directory identifies black, Spanish-surnamed, native-American and white ethnic groups by sex. No summaries or statistics are given by field or degree level. Available from the Government Printing Office for $8.00

DIRECTORY OF SPANISH-SURNAMED AND NATIVE AMERICANS IN SCIENCE AND ENGINEERING. Dr. Joseph V. Martinez compiled this directory for the Foundation for Promoting Advanced Studies. For a copy, wtite Dr. Joseph Martinez, 464 Furnace Rd., Ontario, NY 14519. A donation of $15.00 is requested.

EQUAL EMPLOYMENT OPPORTUNITY FOR MINORITY GROUP COLLEGE GRADUATES: LOCATING, RECRUITING, EMPLOYING. A COMPLETE GUIDE TO RECRUITING MINORITY GROUP MEMBERS BY ROBERT CALVERT, JR. FORMER UNIVERSITY OF CALIFORNIA PLACEMENT DIRECTOR. AVAILABLE FROM GARRETT PARK PRESS, GARRET PARK, MD 20766. $5.95 WITH POSTAGE INCLUDED.

HANDBOOK FOR RECRUITING AT THE TRADITIONALLY BLACK COLLEGES. FOR EMPLOYERS INTERESTED IN FINDING AND HIRING BLACKS, THIS BOOK CONTAINS PROFILES OF 83 BLACK FOUR YEAR COLLEGES AND INFORMATION ON THEIR STUDENTS. EDITED BY ANDRE G. BEAUMONT, IT IS AVAILABLE FROM COLLEGE PLACEMENT SERVICES, INC., P O BOX 2322, BETHLEHEM, PA 18001. $5.50.

SURVEY OF BLACK AMERICAN DOCTORATES. THIS SURVEY FOUND THAT LESS THAN 1% OF THE DOCTORATES IN THE NATION WERE HELD BY BLACKS, AND 80% OF THESE WERE HELD BY BLACK MEN. FOR A FREE SUMMARY OF THE SURVEY, WRITE TO THE FORD FOUNDATION, OFFICE FOR SPECIAL PROJECTS, 320 EAST 43RD STREET, NEW YORK, NY 10017.

II. REGISTRIES

BLACK WOMEN EMPLOYMENT PROGRAM. AN ATLANTA BASED OPERATION WHICH HELPS EMPLOYERS FIND TRAINED AND/OR QUALIFIED BLACK WOMEN FOR JOBS. THERE IS NO FEE FOR THE WOMAN PLACED; SMALL FEE FOR INSTITUTION/EMPLOYER. FOR MORE INFORMATION WRITE BLACK WOMAN EMPLOYMENT PROGRAM, SOUTHERN REGIONAL COUNCIL, 52 FAIRLIE STREET, N. W., ATLANTA, GA 30303.

COOPERATIVE COLLEGE REGISTRY. A NON-PROFIT OPERATION THAT SERVES ITS MEMBER INSTITUTIONS BY LOCATING CANDIDATES FOR JOB OPENINGS FROM RESUMES KEPT ON FILE. (MEMBERSHIP IS $100 FOR COLLEGES AND UNIVERSITIES; INDIVIDUALS ARE CHARGED $10.00 TO REGISTER.) CCR CANNOT SUPPLY SEARCH COMMITTES OR ADMINISTRATORS WITH LISTS OF NAMES OF MINORITY WOMEN, BUT CAN SEND RESUMES OF THOSE WOMEN WHO HAVE REGISTERED AND WHO FIT QUALIFICATIONS DESIGNATED BY THE EMPLOYER. FOR MORE INFORMATION, WRITE TO COOPERATIVE COLLEGE REGISTRY, ONE DUPONT CIRCLE, WASHINGTON, DC 20036, (202) 223-2807.

HIGHER EDUCATION ADMINISTRATION REFERAL SERVICES. A NEW "EQUAL OPPORTUNITY SERVICE" FOUNDED AND SUPPORTED BY THIRTEEN HIGHER EDUCATION ADMINISTRATION ASSOCIATIONS. ON A FEE BASIS, CANDIDATES ARE REFERRED TO INSTITUTIONS SEEKING QUALIFIED PROFESSIONAL ADMINISTRATIVE AND SUPPORT STAFF IN AREAS RELATED TO BUSINESS MANAGEMENT. HEARS IS INTERESTED IN BUILDING AN EXTENSIVE MINORITY TALENT BANK. REGISTRATION FEE FOR INDIVIDUALS IS $25.00 FOR MORE INFORMATION WRITE HEARS, SUITE 510, ONE DUPONT CIRCLE, WASHINGTON, DC 20036. (202) 296-2347.

NATIONAL SKILLS BANK. A TALENT BANK THAT HELPS PLACE MINORITY PERSONS IN PROFESSIONAL JOBS. WRITE: MS. RUTH ALLAN KING, PLACEMENT OFFICE, NATIONAL SKILLS BANK, 477 MADISON AVENUE, 18TH FLOOR, NEW YORK, NY 10022.

III. ORGANIZATIONS

AFRICAN AMERICAN SCHOLAR'S COUNCIL. ALTHOUGH THE MAIN FUNCTION OF THIS AGENCY IS RESEARCH, IT DOES ENGAGE IN SOME INFORMAL JOB PLACEMENT AND REFERRAL. WRITE: AFRICAN AMERICAN SCHOLAR'S COUNCIL, 1150 17TH STREET, N. W., WASHINGTON, DC 20036.

AMERICANS FOR INDIAN OPPORTUNITY. Has a free job referral and placement service. For more information write: Americans for Indian Opportunity, 1820 Jefferson Place, N. W., Washington, DC 20036.

BUREAU OF INDIAN AFFAIRS. A Federal agency which has information on Native Americans including data on degrees attained. Write: Bureau of Indian Affairs, 1951 Constitution Avenue, N. W., Washington, DC , or Bureau of Indian Affairs - Higher Education, 5301 Central Avenue, N. W., Albuquerque, NM 87108.

CABINET COMMITTEE ON OPPORTUNITY FOR THE SPANISH-SPEAKING. Makes job referrals and also has information on Spanish-speaking doctorate holders. Write: Cabinet Committee on Opportunity for the Spanish-Speaking, 1707 H Street, N. W., Washington, DC 20036.

CONFERENCE ON MINORITY PUBLIC ADMINISTRATORS. COMPA has a talent bank of administrators in many varied fields. Write: Ms. Loretta Avent, COMPA, 1225 Connecticut Avenue, Suite 300, Washington, DC 20036.

NATIONAL ASSOCIATION FOR THE ADVANCEMENT OF COLORED PEOPLE. A well-known civil rights organization, the NAACP does not have a formal job placement service or talent bank. However, local branches of NAACP very often are able to recommend highly qualified candidates. The national office is at 1790 Broadway, New York, NY 10019.

NATIONAL ASSOCIATION FOR PUERTO RICAN CIVIL RIGHTS. Has an informal placement and job referral service for all Spanish-speaking persons. Write Mr. Antonio Riva, Director, NAPRCR, 175 116th Street, New York, NY 10029.

PUERTO RICAN RESEARCH AND RESOURCES CENTER. Makes job referrals and offers job placement; and building a talent bank for women. Write to Mrs. Anna Ortiz, Puerto Rican Research Center, 1519 Connecticut Avenue, Washington, DC 20036.

IV Women's Groups

NATIONAL ASSOCIATION OF COLLEGE WOMEN. Job placement and/or referral on an informal basis. National president of this black women's organization is Mrs. Odessa W. Farrell, 4620 Kossuth Avenue, St. Louis, Missouri.

NORTH AMERICAN INDIAN WOMEN'S ASSOCIATION. This groups has six major regions across the country. For more information and guidance on finding Indian professional women, write: Mrs James M. Cox, 3201 Shadybrook, Midwest City, Oklahoma,73110.

ZETA PHI BETA. A black national sorority which has chapters on most black college campuses. The national headquarters can respond to some requests for candidates. Write: Ms. Goldie Baldwin, Executive Secretary, 1734 New Hampshire Avenue, N. W., Washington, D. C. 20009.

V Publications

The following publications reach a large number of minority professionals. All publications accept advertising of job openings. Unless otherwise noted, there is no fee involved.

THE AFRO-AMERICAN, A BI-WEEKLY NEWSPAPER WHICH IS PUBLISHED AND DISTRIBUTED IN BALTIMORE, MARYLAND; NEWARK, NEW JERSEY; PHILADELPHIA, PENNSYLVANIA; AND RICHMOND, VIRGINIA. WRITE TO THE HOME OFFICE, THE AFRO-AMERICAN, 628 N. EUTAW, BALTIMORE, MD 21201, FOR ADVERTISING RATES.

BLACK SCHOLAR, AN ACADEMIC JOURNAL, PUBLISHED MONTHLY, HAS A SECTION IN EACH ISSUE CALLED "BLACK SCHOLAR CLASSIFIED." WRITE BLACK SCHOLAR, BOX 908, SAUSALITO, CA 94965.

JOURNAL, PUBLISHED BY THE NATIONAL MEDICAL ASSOCIATION, THE NATIONAL ORGANIZATION OF BLACK PHYSICIANS. THIS ORGANIZATION ALSO PUBLISHES A NEWSLETTER. JOB OPENINGS ARE ACCEPTED FOR BOTH PUBLICATIONS. WRITE NATIONAL MEDICAL ASSOCIATION, 1717 MASSACHUSETTS AVE., N. W., WASHINGTON, D. C., 20036.

SENTINAL, PUBLISHED MONTHLY BY THE NATIONAL CONGRESS OF AMERICAN INDIANS. CONTACT: MR. JOHN TIGER, 1346 CONNECTICUT AVENUE, ROOM 312, WASHINGTON, DC 20036.

II. LISTING OF WOMEN'S CAUCUSES AND COMMITTEES IN PROFESSIONAL ASSOCIATIONS

THIS LIST WAS COMPILED AND UPTDATED BY DR. RUTH OLTMAN, OF THE AMERICAN ASSOCIATION OF UNIVERSITY WOMEN, AND DISTRIBUTED BY THE ASSOCIATION OF AMERICAN COLLEGES, THE PROJECT ON THE STATUS AND EDUCATION OF WOMEN, 1818 R STREET, N. W., WASHINGTON, DC 20009. (202) 387-3760.

ADULT EDUCATION ASSOCIATION (AEA)
COMMISSION ON THE STATUS OF WOMEN IN ADULT EDUCATION
CHAIRPERSON: DR. BEVERLY CASSARA, 10421 COURTHOUSE DRIVE, FAIRFAX, VA 22030.

ALLIANCE OF WOMEN IN ARCHITECTURE
1818 E. 13TH STREET, NEW YORK, NY 10003

AMERICAN ACADAMY OF RELIGION
TF ON THE STATUS OF WOMEN - THE ACADEMIC STUDY OF RELIGION
CHAIRPERSON: ELIZABETH SCHUSSLER FIORENZA, 1223 N. LAWRENCE ST., SOUTH BEND, IN 46617.

AMERICAN ANTHROPOLOGY ASSOCIATION (AAA)
COMMITTEE ON THE STATUS OF WOMEN IN ANTHROPOLOGY 2/1970
CHAIR: PROF. SHIRLEY GORENSTEIN, DEPARTMENT OF ANTHROPOLOGY, COLUMBIA UNIVERSITY NEW YORK, NY 10027.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE
WOMEN;S CAUCUS OF THE AAAS 2/29/71
CHAIR: MS. VIRGINIA WALBOT, DEPT. OF BIOCHEMISTRY, UNIVERSITY OF GEORGIA, ATHENS, GA 30601.

AMERICAN ASSOCIATION FOR HEALTH AND PHYSICAL EDUCATION
COMMITTEE ON WOMEN
CHAIR: PROFESSOR IONE G. SHADDUCK, DRAKE UNIVERSITY, DES MOINES IA 50311.

AMERICAN ASSOCIATION OF IMMUNOLOGISTS (AAI)
COMMITTEE ON THE STATUS OF WOMEN (AAI HAS A LIST OF WOMEN MEMBERS.)
CHAIR: DR. HELENE C. RAUCH, DEPT. OF MEDICAL MICROBIOLOGY, STANFORD UNIVERSITY SCHOOL OF MEDICINE, STANFORD, CA 94305.

American Association of University Professors (AAUP)
Committee on the Status of Women in the Profession
Chair: Dr. Alice S. Rossi, Dept. of Sociology, Goucher College, Towson, MD 21204.

American Chemical Society (ACS)
Women Chemists Committee
Chair: Ms. Helen M. Free, Ames Co., Miles Labs., Inc., Elkhart, IN 46514.

American College Personnel Association (ACPA)
Women's Task Force
Chair: Dr. Jane McCormick, Asst. to Vice-President of Student Affairs, Pennsylvania State University, University Park, PA 16802.

American Economics Association
Committee on the Status of Women in the Economics Profession
Chair: Dr. Carolyn Shaw Bell, Wellesley College, Wellesley, MA 02181

American Federation of Teachers
Women's Rights Committee
Chair: Ms. Marjorie Stern, 1012 14th St, Washington DC 20005

American Historical Association (AHA)
a. Committee on Women Historians
Chair: Dr. Linda Kerber, University of Iowa, Iowa City, IA 52240.
Staff Liaison: Dr. Charlotte Quinn, 400 A St., S. E., Washington, DC 20003.
b. Coordination Committee on Women in the Historical Professsion (CCWHP)
Chair: Dr. Sandi Cooper, Richmond College, CUNY, Staten Island, NY 10301.

American Institute of Planners
Women's Rights Committee
915 15th St., N. W., Washington, DC 20005.

American Personal and Guidance Association
Women;s Caucus
Correspondents: Dr. Lynne E. Haun, California State University, Sacramento, CA 95819. Dr. Beatrice O. Pressley, California State University, Hayward, CA 94542.

American Library Association (ALA)
Social Responsibilities Round Table (SSRT) - Task Force on the Status of Women
Chair: Ms. Michelle Rudy, 403 Waldron, Lafayette, IN 47409.

American Mathematical Society (AMS - Association for Women in Mathematics (AWM)
(Independent Group)
Chair: Prof. Mary Gray, Dept. of Mathematics, The American University, Washington, DC 20016.

American Philosophical Association (APA)
a. Women's Caucus
Chair: Professor Sara B. Pomeroy, Hunter College, CUNY, Dept. of Classics, 695 Park Avenue, New York, NY 10021.

B. Committee on Status of Women
Chair: Professor Mary R. Lefkowitz, Radcliffe Institute, 3 James St, Cambridge, MA 02138.

C. Society for Women in Philosophy (Independent group.)
Chair: Ms. Hannah Hardgrave, Department of Philosophy, Western Illinois University, Macomb, IL 61455.

American Physical Society
Committee on Women in Physics
Chair: Dr. Elizabeth Baranger, Phsyics Dept., MIT, Cambridge, MA 02139.

American Political Science Association (APSA)
A. Committee on the Status of Women in the Profession
Chair: Dr. Ruth Silva, Penn State University, University Park, PA 16802.

B. Women's Caucus for Political Science (WCPS)
Chair: Dr. Marie Rosenberg, School of Business, University of Wisconsin, Eau Claire, WI, 54701.

Mail to: WCPS, Box 9099, Pittsburgh, PA 15224.

American Psychological Association (APA)
A. Ad Hoc Committee on Women in Psychology
Chair: Dr. Martha Mednick, Department of Psychology, Howard University, Washington, D. C., 20001.
Staff Liaison: Dr. Brenda Gurel, APA 1200 17th St. N. W., Washington, DC 20036.

B. Association for Women in Psychology (AWP) is an independent group, initially a caucus within the APA. Policy Council to be announced. Editor: Dr. Leigh Marlowe, Manhattan Community College, 180 West End Avenue, New York, NY 10023. Public Relations: Dr. Jo-Ann Evans Gardner, 726 St. James St., Pittsburgh, PA 15232.

American Sociological Association (ASA)
A. Ad Hoc Committee on the Status of Women in Sociology
Chair: Dr. Elise Boulding, Behavioral Sciences Institute, University of Colorado, Boulder, CO 80302.

B. Sociologists for Women in Society (SWS) (Independent group, formerly a caucus.)
Chair: Dr. Joan Huber, Department of Sociology, University of Illinois, Urbana, IL 61801.

American Public Health Association
Women's Caucus
Chair: Ms. Ana O. Dumois, Community Health Institute, 225 Park Avenue, South, New York, NY, 10003.

American Society of Biological Chemists - Subcommittee on the Status of Women
Chair: Dr. Loretta Leive, Building 4, Room 111, National Institute of Health, Bethesda, MD 20014.

American Society for Microbiology
Committee on the Status of Women Microbiologists
Chair: Dr. Louise Robbins, Medical School, 1339 H. St., N. W., The George Washington University, Washington, DC 20005.

American Society for Public Administration
Task Force on Women in Public Administration
Chair: Mrs. Joan Fiss Bishop, Director of Career Services, Wellesley College, Wellesley, MA 02181.

American Society of Training and Development (ASTD)
Women's Caucus, ASTD - Steering Committee: Dr. Shirley McCune, Center for Human Relations, NEA 1601 16th St., N. W., Washington, DC 20036; Mrs. Althea Simmons, Director of Training, NAACP, 200 E. 27th St., New York, NY 10016.

American Speech and Hearing Association (ASHA)
a. Subcommittee on the Status of Women - Chair: Mrs. Dorothy K. Marge, 8011 Longbrook Rd., Springfield, VA 22152.
b. Caucus on Status of Women in ASHA (same as above.)

American Statistical Association
Caucus for Women in Statistics
Chair: Dr. Jean D. Gibbons, College of Commerce and Business Administration, University of Alabama, University, Alabama, 35486.

Association of American Geographers
Committee on Women in Geography - Chair, Dr. Ann Larrimore, Dept. of Geography, University of Michigan, Ann Arbor, MI 48104.

Association of American Law Schools (AALS)
Committee on Equality of Opportunity for Women in the Legal Profession
Chair: Professor Ruth B. Ginsburg, School of Law, Columbia University, 435 West 116th Street, New York, NY 10027.

Association of Asian Studies
Committee on the Status of Women.
Chair: Joyce K. Kallgren, Center for Chinese Studies, 2168 Shattuck Ave., Berkeley, CA 94705.

Association of Women in Architecture
Dorothy Gray Harrison, President, 2115 Pine Crest Drive, Altadena, CA 91001.

Association of Women in Science (Independent Group)
Co-Presidents: Dr. Judith G. Pool, Stanford Medical School, Stanford University, Stanford, CA 94305.
Dr. Needna B. Schwartz, Department of Psychiatry, College of Medicine, University of Illinois at the Medical Center, PO Box 6998, Chicago, IL 60680.

Biophysical Society
Professional Opportunities for Women of the Biophysical Society -- Caucus of Women Biophysicists. Chair: Dr. Rita Guttman, Department of Biology, Brooklyn College, Brooklyn, N. Y., 11210.

Church Employed Women
Contact: Ms. Mildred G. Lehr, The Westminster Press, 900 Witherspoon Building, Philadelphia, PA 19107.

College Art Association

A. Commission on the Status of Women in Art
Professor Linda Nochlin Pommer, Vassar College, Poughkeepsie, NY 12601.

B. Women's Caucus
Co-Chairs: Professor Ann Harris, Art Department, Hunter College, New York, NY 10021
Ms. Judy Patt, 2429 Vallejo St., San Francisco, CA 94123.

College Music Society

Women's Caucus
Co-Chairs: Dr. Carolyn Raney and Dr. Adrienne F. Block, Department of Performing and Creative Arts, Staten Island Community College, Staten Island, NY 10301.

Graduate Women in Science (Sigma Delta Epsilon)

President: Ms. Hope Hopps, 1762 Overlook Drive, Silver Spring, MD, 20903.

Linguistic Society of America (LSA)

LSA Women's Caucus - Correspondents: Ms. Lynette Hirschman, Ms. Georgette Ioup, 162 West Hansberry, Philadelphia, PA 19144.

Modern Language Association (MLA)

A. MLA Commission on the Status of Women in the Profession
Chair: Dr. Elaine Hedges, Towson State College, Baltimore, MD 21204.

B. Women's Caucus of the MLA
President: Ms. Dolores Barracano Schmidt, R. D. 3, Slippery Rock, PA 16057.

National Association of Women Deans and Counselors

Executive Director: Ms. Joan H. McCall, 1201 16th St., N. W., Washington, DC 20036.

National Association of Women in Construction

United Engineering Center, 345 E. 7th Street, New York, NY 10017.

National Council for the Social Studies

Committee on Social Injustice for Women
Chair: Dr. Dell Felder, University of Houston, TX 77004.

National Council of Administrative Women in Education

President: Ms. Frances Hamilton, 1201 16th Street, N. W., Washington, DC 20036.

National Council on Family Relations (NCFR)

Task Force on Women's Rights and Responsibilities
Chair: Dr. Rose Somerville, Sociology Department, San Diego State College, San Diego, CA 92115.

National Council of Teachers of English (NCTE)

Women's Committee - Chair: Dr. Janet Emig, Dept. of English, Rutgers University New Brunswick, NJ 08903.

National Vocational Guidance Association (NVGA)
NVGA Commission on the Occupational Status of Women
Chair: Mrs. Thelma C. Lennon, Director, Pupil Personnel Services, Department of Public Instruction, Raleigh, NC 27602.

Philosophy of Education Society
a. Women's Caucus: Chair: Dr. Elizabeth Steiner Maccia, Department of History and Philosophy of Education, Indiana University, Bloomington, IN 47401.

b. Committee on the Status of Women (same as above.)

Population Association of America
Women's Caucus
Chair: Ruth B. Dixon, Department of Sociology, University of California, Davis, 95615.

Professional Women's Caucus
P. O. Box 1057, Radio City Station, New York, NY 10019
President: MS Margaret Anderson, Rockland City Guidance Center for Women, Palisades, New York, 10964.

Society for Cell Biology
Women in Cell Biology
Chair: Ms Virginia Walbot, Dept. of Biochemistry, University of Georgia, Athens, GA 30601.

Society for Women Engineers (Independent group
Executive Secretary: Ms. Winifred D. White, 345 East 47th St., New York, NY 10017.

Society of American Archivists
Ad Hoc Committee on the Status of Women in the Archival Profession
Chair, Dr. Mabel Deutrich, Director, Old Military Records Division, National Archives and Records Service, Washington, DC.

Theta Sigma Phi (National Society for Journalism/Communications)
President: Mrs. Fran Harris, WWJ Stations, Detroit, MI 48231.

United Presbyterian Church in the USA
Task Force on Women
Co-Chairs: Patricia Doyle and Elaine Homrighouse, Board of Christian Education United Presbyterian Church, Witherspoon Bldg., Philadelphia, PA 19107.

Women Architects, Landscape Architects, and Planners (WALAP)
39 Martin Street, Cambridge, MA 02138.

We turn now to the summary of Federal Policy on twenty-five affirmative Action issues.

Lucy W. Sells
12-24-72

The following information is crucial to persons concerned with improving the status of women at Berkeley. It was made available to us by the Project on the Status and Education of Women, Association of American Colleges, 1818 R Street, N. W., Washington, D. C., 20009.

Summary of Federal Policy Concerning Twenty-Five Affirmative Action Issues in Employment: (These issues are central to the achievement of equal treatment in graduate admisssions, earning of the doctorate; hiring, promotion, and tenure decisions at the faculty level; and hiring, promotion, and salary decisions at the staff level. LWS)

Unless otherwise mentioned, Executive Order 11246 and Title VII of the Civil Rights Act apply. Title IX of the Education Amendments Act of 1972 (Higher Education Act) also covers many of these issues. The regulations for Title IX are expected to parallel other employment legislation and regulations. U. S. Department of Health, Education and Welfare (HEW) enforces the Executive Order; The Equal Employment Opportunity Commission enforces Title VII of the Civil Rights Act.

1. Affirmative Action Plans: Required of all institutions with federal contracts totaling $50,000 or more and having 50 or more employees. Revised Order No. 4 details what these plans must cover. Public institutions have previously been exempt from the requirement of having a written plan; the October 4 Federal Register proposes a new rule to end that exemption.

2. Numerical Goals and Timetables: Required of all institutions with federal contracts covered by the executive order. President Nixon reaffirmed (August 11, 1972) federal policy which forbids quotas but upholds goals. Such goals are based on the available pool of qualified persons, and in line with anticipated vacancies, and may be projected in terms of percentages or actual number.

The institution must document its "good faith" efforts: such as what it did to recruit women and minorities; were they interviewed and what was the decision, etc. The obligation to meet the goal is not absolute; if the best qualified person is white and male, he can be hired, but the institution must be able to document what effort was made to recruit women and minorities, that such candidates were treated fairly, and that the white male was indeed "better qualified."

The institution sets the criteria, not HEW. The criteria must be applied equally to men and women, whites and blacks, and must not in itself be discriminatory, i.e., criteria which gave preference to people who did their undergraduate work at Ivy League Schools would be discriminatory in that women have been denied, until very recently, the opportunity to attend such institutions.

In very limited instances only can preference by given to women and minorities: when there has been a history or pattern of exclusion and/or discrimination, and if two candidates are equally qualified, only then can preference be given to the member of the excluded group.

3. Salary Equalization: Women and minorities cannot be paid less because of their sex and/or race. Bona fide merit systems are allowed, provided they are not discriminatory on the basis of race or sex. Criteria for raises must by applied equally. Numerous institutions have set aside specific sums for "equity adjustments." Such salary increases are expempt from federal wage controls. The Equal Pay Act also applies.

4. Back Pay:

Title VII: allowed up to two years (but not prior to date of coverage - for professional staff: March 24, 1972.

Equal Pay Act: allowed up to two years for a non-willful violation and three years for a willful violation (but not prior to date of coverage - for professional staff: July 1, 1972)

Executive Order: time limit not clear. HEW will seek back pay only for those individuals who were not covered by other laws allowing back pay at the time of violation.

5. Pensions such as TIAA which pay women less on a monthly basis because of actuarial differences: Under the Executive Order, employers make either equal contributions or provide equal benefits. Under the stricter Title VII guidelines (April 5, 1972), equal benefits must be provided, regardless of the contribution.

6. Nepotism: Under Title VII and the Executive Order policies or practices which restrict the employment of spouses are prohibited. (A policy which officially applied to all spouses, but in practice applied mainly to wives would be illegal.) Institutions cannot prohibit spouses from working in the same department when both are qualified. To avoid conflict of interest, institutions can prohibit spouses from participating in employment decisions about each other. Such decisions, for example, when one is in a supervisory relationship to the other, can be delegated to someone else or to a committee. (See no. 16, Marital and Parental Status, and NOTE at end of paper.)

7. Maternity Leave: Both Title VII and the Executive Order apply.

--- Childbearing leave: Institutions are advised to follow the stricter Title VII guidelines which apply to all institutions, regardless of whether or not they receive federal aid. Title VII guidelines require that the part of pregnancy and childbirth when a woman is physically unable to work, be treated like all other temporary disabilities in terms of sick leave, health insurance and job retention.

--- Childrearing leave: Under HEW guidelines, if leave is available for other personal reasons, it should be available for childrearing (when a woman is able to work but chooses not to). Such childrearing leave must be available to both sexes.

8. Internal Grievance Procedures: HEW does not require this but recommends that there be written procedures whereby individuals who feel aggrieved because of sex or racial discrimination can ask for investigation and if necessary, redress.

9. Child C[illegible]y required by any of the laws but recommended by HEW guidlines. Many women's groups are pressing for such centers to be available to the children of staff, faculty, and students.

10. Recruitment and Hiring: Under the Executive Order, if current recruiting practices (such as word-of-mouth recruiting) result in a "significantly lower representation" of women and minorities in the applicant pool than would be expected from their availibility in the labor force, then new sources of recruiting must be developed. (Minority and women's caucuses and organizations as well as individual women and minority persons are good sources.) Title VII policy is expected to be the same.

HEW requires that standards and criteria should be "reasonably explicit" and be accessible to employees and applicants.

11. Affirmative Advertising: All notices of job openings in advertisements, flyers, or letters should indicate that applications from women and minoirites are being sought, such as "Women and minorities, including minority women, are welcome to apply." Employers cannot state that only members of a particular sex or race will be considered.

12. Policy Statements: Under the Executive Order Institutions are required to have in writing a policy of non-discrimination in employment. The statement must appear in personnel manuals and be disseminated throughout the campus.

13. Conditions of Employment, Salaries and Benefits: Federal regulation and laws require that there be no discrimination in all conditions of employment, including:

- recruitment, hiring, lay-off, discharge and recall, inservice training
- opportunities for promotion
- participation in training programs
- wages and salaries
- sick leave time and pay
- vacation time and pay
- overtime work and pay
- medical, hospital, life and accident insurance
- optional and compulsory retirement

14. Inbred Hiring: Policies that forbid departments from hiring their own students upon degree completion decrease the available pool of qualified female applicants and work a particular hardship on married women who may not be mobile. Such policies may be a violation of the Executive Order and Title VII and need to be reevaluated.

15. Search Committees: HEW recommends that all search committees wherever possible should women and minorities.

16. Marital and Parental Status: (See no. 6, Nepotism) Discrimination on the basis of marital status is specifically forbidden by Title VII when such criteria are applied to one sex only. Although not specifically mentioned, criteria concerning parental status would also be a violation if only applied to one sex.

17. Monitoring and Accountability: Under the Executive Order, affirmative action plans are required to have a system of accountability and monitoring:

1) an institution-wide office that maintains records and monitors individual departments and units and reports annually

2) individual departments and units are required to maintain records of all applicants and hires, as well as records of the efforts made to recruit women. Such records should allow for an ongoing analysis of all employment decisions: Recruiting, hiring, promotions and salary increases.

18. Job Analysis: Under the Executive Order, all job classifications must be reviewed in order to identify "underutilization" of women and minorities. Data should be provided simultaneously on race and sex, i. e., black women, white women, etc.

19. Minority Women: In all programs recruiting or promoting minorities and/or women, minority women must not be ignored. Minority women are also protected by legislation prohibiting discrimination on the basis of race.

20. Part-Time Status: HEW takes no stand. Women's groups recommend that part-time status be re-evaluated. In several institutions, qualified faculty members are able to ascend the tenure ladder in part-time status.

21. In-Service training: Training programs are suggested by HEW. All such programs are required to be open to persons of both sexes and all races.

22. Work Assignments: Teaching load, research responsibilities, etc., can not be assigned on the basis of sex or race.

23. Termination and Reduction in Work Force: Disparate termination rates for women and minorities are prohibited unless the employer is able to de monstrate reasons unrelated to race, sex, national origin or religion. Lack of seniority cannot be used as a reason for termination when the person(s) laid off has been found to have less seniority because of previous discrimination.

24. Student Employment: Discrimination in employment of all staff, including undergraduate and graduate students is prohibited.

25. Publication of Affirmative Action Plans: Under the Executive Order, such plans, including numerical goals, must be disclosed other than those parts which would involve confidential information about employees and would constitute a violation of privacy, or would disclose financial information about the institutions.

References: Executive Order 11246 as amended
Obligations of Contractors and Subcontractors
Revised Order No. 4
Office of Federal Contract Compliance Sex Discrimination Guidelines
HEW Higher Education Guidelines, Executive Order 11246

Title VII of the Civil Rights Act of 1964 as amended
EEOC Sex Discrimination Guidelines

Equal Pay Act of 1963 as amended

Title IX of the Education Amendments Act of 1972

NOTE: When state laws or regulations conflict with federal law or regulations, the federal laws and regulations supercede.

For a summary of laws, see Federal Laws and Regulations Concerning Sex Discrimination in Educational Institutions, prepared by the Project on the Status and Education of Women, Association of American Colleges.

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PRESIDENT REAFFIRMS NUMERICAL HIRING GOALS

On August 11, 1972, President Nixon, in a letter to the American Jewish Committee, stated that:

> With respect to these affirmative action programs, I agree that numerical goals, although an important and useful tool to measure progress which remedies the effect of past discrimination, must not be allowed to be applied in such a fashion as to, in fact, result in the imposition of quotas, nor should they be predicated upon or directed towards a concept of proportional representation.

The President's statement was interpreted in some quarters as the "end of numerical goals." Subsequent government statements indicate that federal policy concerning goals is unchanged, and that the President's statement was aimed at insuring that goals are not confused with quotas.

Assistant Secretary of Labor R. J. Grunewald stated in a September 13, 1972 speech:

> ... Sanctions under the regulations [Revised Order No. 4] will be imposed unless he [the contractor] can demonstrate a good faith effort in attempting to meet the goal. This represents no change in policy.
>
> President Nixon has reaffirmed this policy and has asked us to make sure we are continuing to follow it. (Underlining added.)

(Under the Executive Order, all institutions with contracts totaling $50,000 or more must develop affirmative action plans, including numerical goals, as described in Revised Order No. 4.)

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3-31-73

HIGH SCHOOL MATH AS THE CRITICAL FILTER IN THE JOB MARKET

We know that the job market is dismal for untrained people. We know that it is better for people with high school and college degrees. We know that the fields which are opening up in the next ten or fifteen years are based on mathematics training. We know that certain groups of students are less likely to take any more math in high school than is required for admission to the University. These include girls and minority students.

A study of admission applications of Berkeley Freshmen shows that 57% of the boys had taken four years of high school math (first year algebra, geometry, second year algebra, trig and solid geometry.) Only 8% of the girls had done so.

The four year math sequence is required for admission to Math 1A, Chem 1A, and Physics 1A at Berkeley. These courses are required for majoring in every field at the University of California <u>except</u> the "traditionally female" (and hence lower paying) fields of humanities, social sciences, education, and social welfare.

We do not know what causes these large differences in math preparation.

1. Is it sex and ethnic differences in ability?
2. Is it differences in motivation?
3. Is it differences in career aspirations?
4. Is it differences in parental encouragement?
5. Is it differences in peer support?
6. Is it differences in counselor encouragement and advice?

If you have any ideas or suggestions about the causes or possible solutions to the problem of lack of mathematics preparation, please jot them down and send them to: Lucy W. Sells, 1181 Euclid Ave., Berkeley, 94708. 524-0397.

Lucy W. Sells
2-8-73

PILOT TEST OF SEX DIFFERENCES IN HIGH SCHOOL MATHEMATICS PREPARATION

This pilot study was conducted to test the investigator's long standing contention that inadequate preparation in mathematics presents a serious constraint in choice of undergraduate major in college. It was hypothesized that girls applying for admission at Berkeley would be less likely to have taken advanced mathematics than boys.

A systematic random sample of names was drawn from the applicants for admission as Freshmen at Berkeley for the Fall of 1972. The folders were pulled from the files, and coded by sex and number of years of high school mathematics taken by the applicant. Some students take only the minimum entrance requirement of two years, some take three years, and some take four years. The distribution is presented below:

Years of High School Math by Sex: 1972

Berkeley Applicants for Admission as Freshmen

Mathematics	Boys	Girls	Total
Two Years	7%	36%	21%
Three Years	36	56	46
Four Years	57	8	33
Total	100%	100%	100%
(Number)	(42)	(39)	(81)

Source: Berkeley Admissions Office

The difference of forty-nine percentage points between boys and girls among those who took four years of mathematics is striking, and statistically significant at the .001 level. $\chi^2 = 19.942$ with two degrees of freedom.

Lucy W. Sells
2-4-73

Pilot Study of Attitudes Toward Mathematics

This is a summary of an exploratory pilot project on attitudes towards mathematics. A questionnaire was distributed to the members of an upper-division social science class. It contained questions about performance in elementary school, high school; expectations and encouragement by teachers, parents and peers; whether or not respondents had taken mathematics beyond the geometry requirement in high school; and an open ended question on "What do you consider to be the most important factors which influence your interest and aptitude for doing mathematics?"

There were 34 women and 4 men, with no sex differences in the responses.

The first table shows the relationship between encouragement by parents, teachers, or peers, and whether or not students took mathematics beyond the admissions requirements for the University of California.

Advanced High School Mathematics by Social Support

	Some Social Support	No Social Support	Total
Took Advanced Math	13	7	20
Did not take Any Advanced Math	1	17	18
Total	14	24	38

There is a strong ($Q = .94$) and statistically significant ($\chi^2 = 13.87$, $\alpha < .001$ with 1 degree of freedom) relationship between social support from teachers, parents, and peers, and the pursuit of advanced mathematics courses in high school.

The second table shows the relationship between encouragement by parents, teachers, or peers, and performance in the advanced mathematics courses.

	Some Social Support	No Social Support	Total
A's & B's	13	3	16
C's & D's	-	4	4
Total	13	7	20

Again, the relationship between social support and performance in advanced high school mathematics is strong ($Q = 1.00$) and statistically significant ($\chi^2 = 9.29$, $\alpha < .01$ with 1 degree of freedom.)

While it is not possible to generalize beyond the small sample of social science undergraduates, the relationships between social support, taking advanced high school mathematics, and performing well in it are striking. They suggest the need for an experimental project designed to increase the level of social support for those undertaking high school mathematics.

OPEN-ENDED RESPONSES TO "IN SUMMARY, WHAT DO YOU CONSIDER TO BE THE MOST IMPORTANT FACTORS WHICH INFLUENCED YOUR INTEREST AND APTITUDE FOR DOING MATHEMATICS?

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1. FROM THOSE WHO TOOK ADVANCED MATH, AND DID WELL IN IT:

"GOOD GRADES AND ENCOURAGEMENT OF TEACHERS. ALSO I SIMPLY ENJOYED IT. I DO KNOW THAT IF KIDS WERE NOT ESPECIALLY INTERESTED IN TAKING MORE MATH, HIGH SCHOOL COUNSELLORS DID NOT PUSH THEM TO."

"I DID WELL IN MATH IN MY PRE-HIGH SCHOOL YEARS & HAD CONFIDENCE IN MY ABILITY TO HANDLE IT IN HIGH SCHOOL. I WAS ENCOURAGED BY MY TEACHERS IN HIGH SCHOOL BUT WAS NOT ENCOURAGED (IN FACT DISCOURAGED) TO CONSIDER A COLLEGE MAJOR IN MATH."

"SELF-MOTIVATION AND PARENTAL SUPPORT. ALSO COMPETITION BETWEEN ALL OF THE KIDS (OVER 200) IN THE ADVANCED CLASSES IN MY HIGH SCHOOL. WE ALL TOOK THE SAME COURSES. IT NEVER OCCURED TO ME THAT I COULDN'T DO WELL IN MATH - ONLY THAT MORE EFFORT MIGHT BE REQUIRED THAN SAY IN ENGLISH."

"MAINLY, MY ABILITY TO DO WELL IN MATH. ALSO MY COUNSELOR AND MY PARENTS ENCOURAGED ME TO TAKE HIGHER LEVELS OF MATH AS PREPARATION FOR COLLEGE."

"I HAD PLANNED TO DISCONTINUE MATH AFTER THE MINIMUM UNIVERSITY REQUIREMENT OF TWO YEARS, HOWEVER BECAUSE OF A GOOD MATH DEPARTMENT I CONTINUED 'JUST IN CASE' MY INTERESTS HEADED IN THAT DIRECTION - ALSO PEERS DECIDED TO CONTINUE. HOWEVER, BY SENIOR YEAR I WAS ONLY FEMALE IN CLASS."

"I DID WELL IN JR. HIGH, MY PARENTS WERE PLEASED. I TOOK 3 YEARS OF MATH PARTLY BECAUSE I KNEW I DID FAIRLY WELL IN THE FIELD & I WISHED TO HAVE A GOOD BACKGROUND FOR COLLEGE. THERE WAS ENCOURAGEMENT TO TAKE MATH & SCIENCE, AND ALL THE COLLEGE-PREP COURSES."

"I DID WELL IN MATH BECAUSE I HAVE AN ORGANIZED MIND. I HAVE RECEIVED AN 'A' IN ALMOST EVERY MATH CLASS I HAVE TAKEN, INCLUDING COLLEGE LOGIC. BUT MY MAJOR IS ENGLISH, IN WHICH I DID CONSISTENTLY WELL, BUT NOT WITH A STRAIGHT 'A'. THE DICHOTOMY MUST MEAN SOMETHING IN MY SOCIALIZATION WHICH I CANNOT PUT MY FINGER ON."

"I FEEL I HAVE AN INBORN FEEL FOR NUMBERS. I ENJOY CALCULATIONS AND ALTHOUGH MANY MALE CLASSMATES FELT COMPETITION, THIS NEVER BOTHERED ME. I DON'T EVER REMEMBER ANY DISCOURAGEMENT TOWARD MATHEMATICS. I WAS CONSTANTLY ENCOURAGED FROM ALL SIDES. I MUST ADD THAT I WAS ALMOST A MATH MAJOR, BUT DECIDED TO US IT PRACTICALLY INSTEAD." (1)

"MY FATHER AND MALE MATHE TEACHERS WERE MOST ENCOURAGING AND THEN MOST DISCOURAGING AS I DID NOT WANT TO CONTINUE IN A FIELD WHICH SEEMED TO STRESS ABSTRACT THOUGHT WITHOUT CONCERN WITH ITS RELATIONSHIP TO PERSONAL EXPERIENCE. THEY SAW MY INTERESTS IN OTHER FIELDS AS IMPRACTICAL, SILLY, SENTIMENTAL. I REBELLED AND DISCONTINUED MY MATH PROGRAM."

"THE ENTHUSIASM OF THE TEACHER FOR HIS SUBJECT & HIS OR HER ABILITY TO COMCUNICATE IT TO ME AND MY FELLOW STUDENTS. ALSO HELPS TO HAVE FELLOW STUDENTS EXCITED ABOUT THEIR WORK."

2. FROM THOSE WHO TOOK ADVANCED MATH, AND DID POORLY IN IT:

"I FELT LESS INTELLIGENT THAN MALES AND SOME FEMALES IN THE CLASS, BUT THIS GAVE ME INCENTIVE. I STILL FEEL THIS WAY, BUT NO LONGER GET INCENTIVE FROM THIS INFERIOR POSITION. A MATH TEACHER CALLED ME STUPID IN FRONT OF THE CLASS ONCE AND THIS HAD A GREAT NEGATIVE EFFECT ON MY OPINION OF MY INTELLIGENCE."

"My first and half of my second year of High School was in a very large co-ed school. Classes in math were mainly boys. Few girls planned college careers. In Soph year I went to a small convent HS for girls. My teachers were nuns. I did very well that year in my math classes, compared to the previous experience. I then transfered to a co-ed religious school. All classes were segregated EXCEPT for math and science, where the school felt they would not have enough women enrolled to warrent an all-women's class. We had a man teacher, it was predominatly a men's class. That year I failed Algebra III & IV. So did many of the other women in the class."

"General feeling from parents that all the members of the family did well in the humanities, poorly in math. This was not a sexist orientation, but very influential. Have since found out that I have a very strong natural bent for math. I grew up feeling that I was not inclined toward math - feeling that other academic areas were more interesting - that I wouldn't have much use for a lot of math - all this even though I did very well in Arithmetic in early school years. My interest in math consistently declined - feelings from peers and from parent were anti-math - not overtly sexist - nevertheless I never considered getting a degree in a field that was predominantly a male field - probably because of a mostly covert sense of the feminine role - ABSOLUTELY NO ENCOURAGEMENT from teachers, parents, peers or anyone."

"My math teachers in high school were mostly men. I remember them as being very cold, impersonal, apathetic of my existence as anything other than a math student. And in the fifth grade when math didn't sink in right away I became very discouraged. According to the tests I've taken I'm supposed to be getting A's in math."

In first grade my teacher told me I was stupid because I didn't understand arithmetic, but offered me no help with it. I know I hated the teacher from that point on and possibly I also hated math."

3. From those who did not take advanced math in high school:

"My good aptitude for math was not encouraged. It was generally ignored and not stressed. I was pushed into fields of social science. If I had been encouraged to continue in math, I would have continued. But my straight 'A's in math were noticed by no one. My social science 'A's were heartily encouraged."

"My parents and teachers never encouraged and in some cases, discouraged my interest in any profession. (They assumed I would marry and have children.) I never saw any need for math beyond the beginning levels because I did not intend to go into any profession requiring it. I was, at one time in high school actively interested in chemistry and university work in pharmacy, but my chemistry teacher ignored it and did not respond to my stated interests. (I got A's in Chemistry.) and my parents felt my ambitions were foolish, so I gave up my first interest in chemistry, be second interest in business administration, and chose education!"

"None. Everyone discouraged me."

"Everyone told me it was hard and complicated. Although I got good grades in it I didn't really apply myself and very early believed that I didn't understand it and it was over my head."

"I had very poor, apathetic math teachers who never gave technical & psychological help. There was no inspiration to learn and no help when I didn't understand something

"Parochial school 1-8 gave excessive drill and emphasis on efficiency and skill rather than math for fun and creativity."

"My teachers were usually women - then suddenly in 7th and 8th grade there were men teachers and they all taught math or science. Something was going on here and it scared me, so I avoided science and math. The message wasn't verbal, but it was clear. (Influences:) Socialization factors. And fear. It's difficult to step confidently into what is obviously male territory if you're confused about the necessity of taking the course at all, you're unsure about how well you'll do, (if obviously intelligent women refuse math then there must be something magical and terrible about it that only men can handle), you're not even sure you like math. "What a bother," you think, and you take drama."

"Inability to ask questions, fear of looking stupid, considering the unimportance of math in the future for me. Since it was unimportant for me (for various reasons) to pursue math and I had average performance in math most attitudes were neutral but as for myself I was (and am) fearful of math, science (almost mystically) I discourage myself thinking I could not do well."

"My neutrality turned to dislike of mathematics when I began Algebra. Also my interests became focused upon my social life, so the subjects that I felt to be difficult I avoided as much as possible. Math, especially the higher maths, gave me some difficulty. Probably the only high school subject I had to apply much effort at - so I steered away from math and took subjects that afforded me no difficulty."

"I was the top student in my 8th grade class, and even won prices. I thought I would continue in mathematics. Boring, disinterested teachers led to my disenchantment with mathematics, combined with a growing interest in social sciences and humanities. I could have passed any math class offered, but it was my choice, and I chose not to continue in math."

"Poor instruction,uninterested, uninspired by teachers; lack of encouragement from home(except sister tried to help but she could not help enough); my attitude was completely defeatist."

"In the 4th grade I was a slow learner and was placed in remedial math from which I never escaped. There were more boys than girls in my class & we remained together through 12th grade. (Once you get behind in arithmetic, it is difficult for the teacher you get later to catch you up.) I took math every year in Jr. High and High School, & ended up a senior in geometry with 9th graders."

"When in the third grade I missed two weeks of school during which multiplication and division were introduced. Since then I have never regained any confidence in the field. The interest has always been lagging and the aptitude, if any, unfound."

"Too frustrating. Could not see any relevance in working with figures."

"There was a kind of(basically unspoken) pressure from peers, parents, faculty, etc. for males at my school to continue, but a smaller amount of pressure for females. (Females were never discouraged, though, and frequently encouraged.)"